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JUN 23 1937

HYGEIA

THE HEALTH MAGAZINE

Published by the American Medical Association

HEADACHE the causes, treatment and importance of this, the most common among all human afflictions.

TENNIS its potentialities at any age—a source of competitive sport before and of recreational fun after forty.

OFF TO CAMP a personal message which will be of interest to model parents of prospective model campers.

THE TYRANNY OF NERVES how to be freed from foolish fears and fancies—a sound working philosophy.

SEASICKNESS is it mental or physical? a query that will prove intriguing both to sea-dogs and to landlubbers.

THE RIGHT OF SIGHT an article on methods of safeguarding one of the essential and inalienable human rights.

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JULY 1937

Wake up Summer Appetites!

WITH THESE DELICIOUS

SALAD SUGGESTIONS

Amazingly simple to prepare, these four delightful salads will bring pleasure to your palate and ease your summer cooking problems. They are rich in proteins and also contribute important vitamin D to your family's diet. Try them for economical summer meals.

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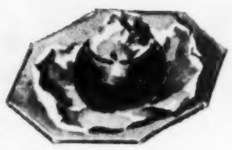
CLIP OUT AND PASTE IN YOUR FAVORITE COOK BOOK

MOULDED SALMON SALAD

1 tablespoonful gelatin
¼ cup cold water
¼ cup mayonnaise
1 1-lb. can salmon, chilled
2 hard cooked eggs, chopped fine
1 tablespoonful sweet pickle, minced salt, pepper, paprika to taste.

Soften gelatin in cold water and put over hot water until dissolved; add gelatin to mayonnaise. Empty salmon from can and flake, being careful to remove skin and large bones. Fold salmon into mayonnaise and add egg, pickle and seasoning. Put into wet mould and chill until firm. Turn out on platter and garnish with watercress and lemon slices.

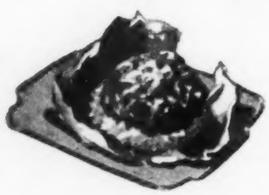
TOMATO CUPS OF TUNA



1 1-lb. can tuna, chilled
⅔ cup celery, chopped
1 hard cooked egg, chopped
1 dozen stuffed olives, minced
½ cup mayonnaise
tomatoes, one for each serving
salt and pepper.

Remove tuna from can and flake; add celery, egg, olives, seasoning and moisten with mayonnaise. Peel tomato, take out portion of top and chill. Stuff tomato with tuna fish salad and serve on lettuce.

SARDINE AND EGG SALAD



1 can sardines, chilled
4 hard cooked eggs
6 stuffed olives
mayonnaise

Remove sardines from can and flake carefully taking out skin and bones. Put yolk of eggs through a sieve, add to flaked sardines; add olives, moisten with mayonnaise. Arrange on crisp lettuce and garnish with border of finely chopped egg whites.

MACKEREL RING SALAD

1 can mackerel, chilled
¾ cup cucumber, finely chopped
2 tablespoons minced pickle
2 tablespoons chopped green pepper
mayonnaise

Remove mackerel from can and flake; add other ingredients, moisten with mayonnaise. Make a nest of shredded crisp lettuce, heap the mackerel salad in a circle on the platter and fill center with lettuce—garnish with tomato slices.

AMERICAN CAN COMPANY

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That is not the case. He still has patients to see who cannot come to his office. There are hospital rounds to make. Medical meetings to attend.

Perhaps you do not realize that many a night, unknown to you, your doctor may be found at his office, diligently studying the latest medical journals and text-books. The place called "the doctor's office" is transformed at night into "the doctor's study."

This is one of the ways by which *the medical knowledge and experience of the entire world* become available to your baby—through your own doctor.

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HYGEIA•

JULY 1937

THE HEALTH MAGAZINE

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Edited by Morris Fishbein, M.D.

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Number 7

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The story of Bob—the nail—and the needle

IT WAS RESOLVED that the Little Giants Club should have a new clubhouse.

It was further resolved that said clubhouse would be in Bob Wilson's back yard and that Bob would be in charge of building operations.

Bob, in pursuit of his duties, stepped ker-plunk on a nail that was sticking out of an old board.

The wound seemed slight—it bled hardly at all. So Bob, carefully bandaged, was soon out playing again. *But*—that nail had been in contact with dirt. And this meant a possibility that the tiny, deadly germs of tetanus (lockjaw) had been left deep in the tissues of the foot.

Did Bob pay the horrible penalty that the *bacillus tetani* exacts? No. Thanks to a tiny needle, he did not run that risk. For when Bob's father came home that night he took a look at the injured foot. "A puncture wound from a dirty nail? I don't like that," he said. "We're going to see the doctor right away."

The doctor didn't like the wound, either. He gave Bob an injection of tetanus antitoxin—a little needle prick scarcely more painful than a mosquito bite. But that simple treatment *prevents* the development of tetanus.

The few minutes spent in the doctor's office saved Bob's parents from hours of worry. And the shack that might have been a tragic reminder is now the proud headquarters of the Little Giants.

* * *

Any wound or injury that forces particles of soil or street dirt into the tissues under the skin, away from the air, carries the threat of tetanus.

This is true not only of auto and industrial injuries, and gunshot and fireworks wounds, but of deep cuts and "puncture wounds." Such wounds are not uncommon. Any of us may get them in outdoor sports, repairing a fence, on a camping trip, or working in the garden.

These wounds are dangerous, and the ordinary precautions such as cleansing and bandaging are not enough. *See your doctor without delay*, and follow his advice.

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DETROIT, MICHIGAN

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EDITORIAL

Fourth of July Accidents

THE WORLD does not long remember its tragedies. In August 1903 for the first time the American Medical Association presented in its *Journal* the mortality record of the nation's celebration of Independence Day. The world was astounded to learn that there had been over 400 deaths, mostly of children, from tetanus or lockjaw following Fourth of July celebrations. The firing of blank cartridges, the explosion of toy pistols and occasionally of firecrackers were chiefly responsible. Aside from the deaths from tetanus, there were innumerable records of persons made blind, persons who lost one eye, who lost hands, arms or legs, fingers or other parts of the body through explosive methods of expressing joy over the nation's freedom.

In 1916, for the fourteenth consecutive year, the reports were published indicating that there had been a rapid decline in the number of casualties. That was the first year in which not a single death from lockjaw was reported.

Now the passing of the years has brought new methods of celebration and new types of fatality which demand our consideration. Yet accidents from fireworks continue to constitute a menace to health and life. There was fairly good statistical evidence to indicate that in 1934, 70,738 persons were injured and at least 30 killed in celebrating the Fourth of July with fireworks and the accompanying paraphernalia. Among the casualties were large numbers of infants and babies too young to have any notion of what the Fourth of July was all about. The accidents occurred in at least forty-seven of the forty-eight states. In New York City alone 2,541 persons were treated in the hospitals for Fourth of July accidents and injuries. All the investigations showed that there is no such thing as harmless fireworks. The common firecracker caused more than 2,000 of the 3,000 casualties. Sparklers caused 90 casualties, including at least 4 fatalities. The Roman candle, the skyrocket, fountains, red and green lights and even the innocent cap pistol were recorded as associated factors in Fourth of July casualties.

From time to time the medical periodicals record extraordinary accidents indicating the extent of this menace. In Philadelphia in 1931 a man, aged 42, while intoxicated accepted a wager from one of his drunken friends and put a torpedo in his mouth and chewed down on it. The torpedo exploded, ripping his tongue from his mouth, fracturing his skull and blowing his cheeks out of his face. He died an hour and a half after his performance.

In Bellevue Hospital, New York City, in 1930 and 1931, eight cases were recorded of children whose eyes had been damaged by small pieces of flying gravel propelled by the explosion of torpedos.

A young man in Fargo, N. D., put two giant firecrackers in the barrel of a bicycle pump. He was brought into the hospital with the rod of the air pump plunger passing completely through his head. Paralysis developed.

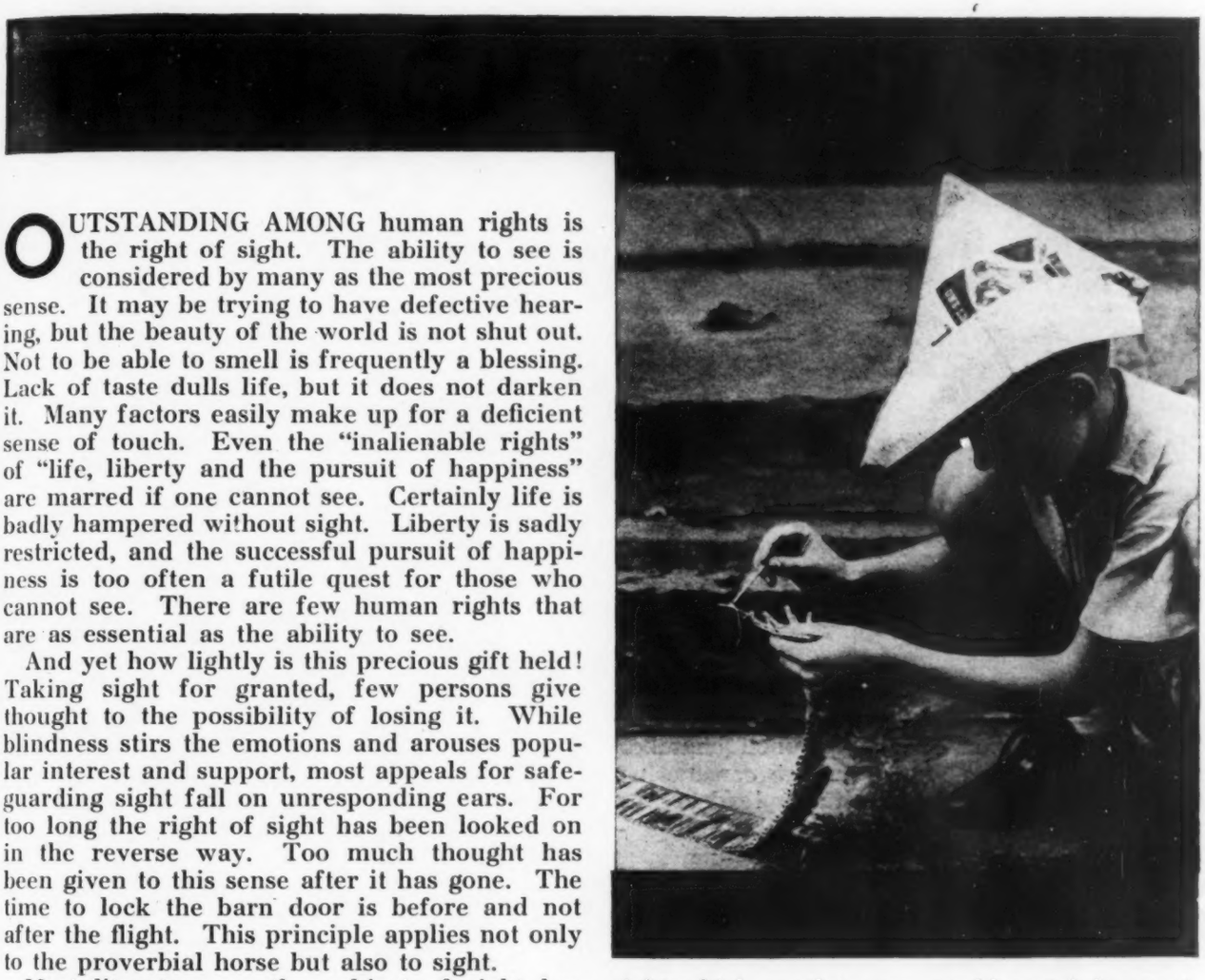
Nowadays in the celebration of Independence Day, automobiles take a larger number of lives than any other cause, with drownings ranking second and fireworks third. The campaign against motor car accidents is beginning to show results in some places, and no doubt an intensification of this campaign will lead eventually to complete control. Apparently the campaign against the hazards of fireworks must be continuous. The National Safety Council has suggested that the following cautions be passed along to children:

1. Don't hold firecrackers—even the smallest—in your hands.
2. Don't throw firecrackers at any one.
3. Don't shoot them off under bottles.
4. Don't carry them in your pockets.
5. Let firearms alone.
6. Don't play with or carry dynamite caps.
7. Avoid gun powder and toy pistols.
8. Remember that powder-burns, even if they do not look it, are dangerous. They may cause infection or tetanus or lockjaw.
9. If you do get burned, get first aid at once.

It is not too soon to begin the campaign against loss of life and sight from fireworks right now. In many cities there are good ordinances against the sale of fireworks; but similar conditions do not obtain in the areas just outside the cities, and careless parents drive the family out to pick out the fireworks.

Whenever an injury from fireworks occurs get a doctor as soon as possible. He will open the wound, clean it and treat it with suitable antiseptics, and in questionable cases he will inject an antitoxin to prevent lockjaw. Never wait until lockjaw develops. After the disease has developed, it is one of the most serious that can affect a human being.

HYGEIA this year will participate in the campaign of the American Medical Association against Fourth of July accidents and deaths. The records will be accumulated from the hospitals, the dispensaries and the health officers of the United States and will be published in *The Journal* of the American Medical Association and in HYGEIA by August or September. Thus the world will know again exactly what our Fourth of July celebration by explosive method is costing us. This is the kind of campaign in which every human being with intelligence should participate.



OUTSTANDING AMONG human rights is the right of sight. The ability to see is considered by many as the most precious sense. It may be trying to have defective hearing, but the beauty of the world is not shut out. Not to be able to smell is frequently a blessing. Lack of taste dulls life, but it does not darken it. Many factors easily make up for a deficient sense of touch. Even the "inalienable rights" of "life, liberty and the pursuit of happiness" are marred if one cannot see. Certainly life is badly hampered without sight. Liberty is sadly restricted, and the successful pursuit of happiness is too often a futile quest for those who cannot see. There are few human rights that are as essential as the ability to see.

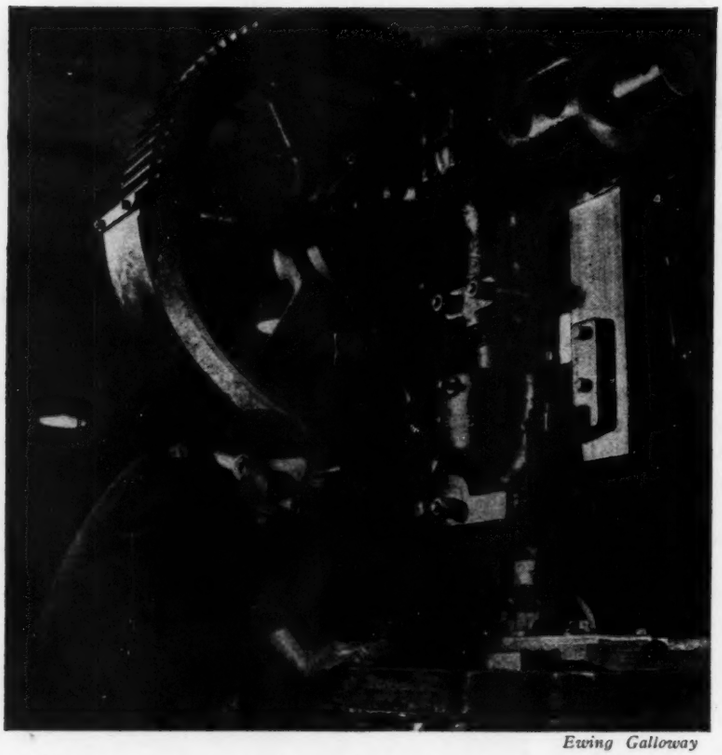
And yet how lightly is this precious gift held! Taking sight for granted, few persons give thought to the possibility of losing it. While blindness stirs the emotions and arouses popular interest and support, most appeals for safeguarding sight fall on unresponding ears. For too long the right of sight has been looked on in the reverse way. Too much thought has been given to this sense after it has gone. The time to lock the barn door is before and not after the flight. This principle applies not only to the proverbial horse but also to sight.

Most literature on the subject of sight has dwelt on the consequences of its absence or on methods of remedying its defects. What is written here concerns neither of these aspects; nor is it addressed in a sympathetic or an understanding way to those without sight. It is directed most earnestly to those who still have the ability to see, urging them to cherish this gift and to lend their support in recognizing this ability as an inalienable right of which no human being should be deprived.

All over the world, people are being deprived of this human right needlessly and shamefully! While the extent of blindness is probably less in this land than in most other countries, the presence of 120,000 persons without sight, or one blind person in every thousand of the population, and 50,000 children with defective vision is too great a toll to be considered lightly. And the tragedy is multiplied by the fact that nearly three fourths of the blindness in this country is absolutely preventable!

Perhaps the best way to attack this problem is for those of us who have sight to ask what right we have to jeopardize this precious sense, as possessed both by ourselves and by others. Well may we ask, for example, what right we have to permit the inevitable deprivation of sight which another war would certainly exact. Few victims of the last war are more to be pitied than those who lost their sight. While many have adjusted themselves and fill us with admiration for their courage, the world is still black for most of them. A recent book by an English officer, blinded in the war, tells a fascinating story of how he was lifted "out of the abysmal depths of gloom and mental depression" and how he became convinced "that blindness was only a handicap to life and not the end of it." A similar book by a French officer tells of his adjustment to an unseeing world; and while he relates it with a fine spirit, there is a poignant pathos as he tells of the wife whose face he has never seen and of the little son of whom he writes, "When he walks along with me holding to my hand, he thinks that I am leading him; and before long he will be asking me to read to him the little stories in his picture book. . . . But a day will come when doubt will arise, then the mystery of the eyes that do not see."

One views the loss of sight as a handicap; the other speaks of the "mystery of the eyes that do not see," but the destruction of sight by war must be looked on as a barbarous deprivation of a human right. There ought to be a



THOSE CAPTAINS OF INDUSTRY WHO REGARD THE RIGHT OF SIGHT AS INVIOLABLE ARE SEEKING TO PROVIDE AS MANY SAFETY MEASURES FOR THE PROTECTION OF THEIR WORKMEN AS POSSIBLE.

Ewing Galloway

law requiring that in every council chamber where the captains of nations are considering war or when measures which may lead to war are being enacted, there also be present all persons blinded in the last war!

Let us turn to industry and see how its captains regard the right of sight. What do we find? Five hundred thousand eye accidents annually. One hundred persons made totally blind every year. Three thousand cases involve the loss or serious impairment of sight in one eye. The annual loss of sight in industry alone creates a financial burden of well over $2,000,000. The carelessness and neglect which may be held responsible for the majority of cases of accidental blindness should not be tolerated by the seeing world. It is a matter of self protection, for who knows where the next blow will fall? It must be added, however, that industrial leaders are not unaware of this toll of loss, and the results of safety measures make an impressive record, which inspires and impels us to increased efforts to reduce accidental blindness to a minimum.

Another appalling factor in accidental blindness which calls for control if not entire elimination lies in fireworks. Twenty-three per cent of eye accidents among children is caused by fireworks, and in the newspapers every morning after the Fourth of July, headlines portray the ghastly price we pay for so-called patriotism. Add to this the loss which comes from air rifles and arrows which are shot while playing Indians, jack-knives, scissors, wires, fish-hooks and other implements which we allow children to have too freely, and we have a glimpse of how lightly the gift of sight is held.

In addition, there is unnecessary destruction of this precious sense by inadequate examination of children's eyes and the fitting of glasses by incompetent practitioners. In a child's life, nothing is more important or more worth safeguarding than his vision. It has been stated that 65 per cent of what is learned is acquired through the eyes. What a tragedy it is to permit this avenue of learning to be closed needlessly!

Turn to another field where perhaps the responsibility for permitting the loss of sight falls more heavily on those now blind than on those who have sight. The loss of sight which is attributed to hereditary causes compels serious and thoughtful consideration. Without question, much might be accomplished if it were possible to exercise control in this field. It is futile to point out that all hereditary difficulties could be eliminated in one generation if those predisposed to blindness would refrain from marriage or from the bearing of children in whom the defects would be carried. This goal could hardly be obtained without recourse to positive and drastic measures, for an attempt to prevent merely by verbal appeal the marriage of, or bearing of children by, the number of individuals concerned would be as ineffective as it is simple. Yet this is a direct responsibility which the present generation of blind people must assume.

The reduction of blindness from hereditary causes nevertheless lies within the realm of possibility and should be effected. Much information about hereditary blindness is now available. Dr. J. Myles Bickerton stated in a paper read before the Eugenics Society in England in March 1932 that "we know more about the

hereditary diseases of the eye than about those of any other organ, and for the good reason that, being the most important and complicated of our sense organs, its slightest defects cause marked disturbances of functions." The importance of attack in this field lies in the fact that 21 per cent, or nearly one fourth, of *all* blindness could be prevented by the elimination of hereditary causes.

Studies showing the action of heredity throughout many generations are numerous. Of the 939 children for whom case studies have been made from the records of Perkins Institution, 275, or 29 per cent, showed defective ancestry or had siblings who were defective. Census records reveal that the percentage of blind individuals having blind relatives, parents or siblings, varies from 4 to 30 per cent. The inferences to be drawn from such figures make it difficult to understand the apathy exhibited by the seeing public.

Indeed the question may well be raised as to what right we have to allow generation after generation to continue to produce children who will be defective and who often must be maintained at public expense. The records of Perkins Institution contain the history of one family which covers five generations, and of which twenty-four of the fifty members had cataract, and nine of them attended the school at public expense. Certainly in a school for the blind the appearance of the children of former pupils and of as many as four brothers and sisters should not be ignored. Intelligent action would involve the development of a comprehensive program for field work with the full cooperation of state authorities. Back of this must be an awakened public conscience that sight is a right to be maintained even at the cost of parenthood.

Hopeful as all these fields are for the conservation of sight there is still another in which the outlook for achievement is even brighter although the factors involved are to most persons appalling. There has long been a social taboo about mentioning the venereal diseases. Yet it is in this arena that a battle, fierce but winning, may and must be fought if the right of sight is to be maintained for many who are now destined for a darkened world. Here is a field where vividly and viciously the sins of the fathers are visited on their children.

THE direct attack today must be on syphilis because the battle against the visual consequences of gonorrheal infection is one of the epics of yesteryear in the conquest of causes of blindness. At least 15 per cent of all loss of sight is attributable to syphilis, both congenital and acquired. The pernicious ramifications of this disease go deep into the vitals of public health, filling with countless victims, hospitals for the insane, institutions for the feebleminded, schools for crippled children and homes for the indigent. As a result, syphilis has been declared to be a greater menace to public health than any other single infectious disease not excepting tuberculosis. The toll levied by syphilis is magnified many times by the fact that by the application of proper therapeutic measures this curse could be blotted out.

The campaign, however, must be waged not against an elusive, unisolable germ but against public opinion. The sufferers reap the consequences of neglect—neglect based on a cultivated ignorance long protected by a society unwilling to recognize and openly combat this dread disease. If the right of sight is to be maintained the mask must be stripped from this source of human misery. A continual oversight of the consequences of the ancient taboo cannot and must not be tolerated.

HIDEOUS as are all the manifestations of this disease, none are more tragic than those passed from one generation to the succeeding one. A society can hardly be called human when it is composed of individuals who, unmoved, will see payment exacted from innocent children. But how often is an individual moved to indignation at the sight of a blind child? Were he told that interstitial keratitis had caused the child to lose his vision he might still have no strong emotional reaction. However, figures show that from 8 to 10 per cent of pregnant women in prenatal clinics have a positive Wassermann reaction and that 2 per cent of their children have heredosyphilis. In one half of the children who survive to suffer late heredosyphilis, interstitial keratitis will develop. This is but one of the ways in which syphilis may lead to blindness. Choroiditis, leading to destruction of the retina, and juvenile optic atrophy too often bear witness to this prenatal infection of the blood stream. Because congenital syphilis becomes actively apparent between the ages of 5 and 15 years, those engaged in work in schools for the blind are acutely aware of the insidious, slow destruction wrought by its presence, a destruction which is not limited to any single part of the nervous system.

The ironic tragedy of this situation lies in the fact that it is within man's power to exercise absolute control if he will. Blindness from this source can be wiped out. Acquired syphilis can be accurately diagnosed in its early stages, and its course can be arrested though this involves intensive and prolonged treatment. Congenital syphilis may likewise be brought under control through systematic treatment. Here again only those working with blind children can appreciate the sufferings borne by that pathetic group of individuals who week after week must submit to the jab of the needle and must feel the treatment coursing through their blood, a treatment which is so dangerous

that it can be administered only in the presence of a physician, and which because of its severity levies its own toll.

To bring about the possible eradication of congenital syphilis and the conservation of sight destroyed by it involves the full cooperation of doctors, the support of the press and the radio, and the active approval of an enlightened public. Medical authorities know that treatment of an infected pregnant woman started at about the fourth month will protect the child from the curse of congenital syphilis. If medical schools will make this routine the established practice in teaching, if all doctors will as a part of prenatal examination give blood tests followed by treatment where results indicate its need and if prospective parents can be taught to demand this care, thousands of children can be saved from the ravages of this gruesome disease.

THE stigma which has attached itself to "blood tests" cannot be removed in a day. The difficulties to be met, however, are but slight in comparison with the prospects of prevention if this practice is established. The time may come when the request made by a mother to a prospective son-in-law when he asked for her daughter's hand will also be a routine practice. "Come over next week, and let's talk about it. And when you come," she requested, "bring the record of your Wassermann test!"

Appalling as are the factors involved in the salvaging of sight tainted by syphilis, and skeptical as many are of results, it is a strange turn of events that enables us to point directly to the field of venereal disease for positive proof of the possibilities of prevention and for the certainty of accomplishment. Fifty years ago ophthalmia neonatorum, or "babies' sore eyes" caused by gonorrheal infection at the time of birth, was the largest single cause of blindness in children and the cause of the loss of sight of 40 per cent of the pupils in American schools for the blind. In 1908, however, the proportion was 28.8 per cent. In 1932 it was 7.5 per cent!

Credit for this splendid accomplishment goes to Dr. Karl F. Credé, a Belgian obstetrician, who while working in the hospital in Leipzig in 1879 discovered that the infection which causes ophthalmia neonatorum could be destroyed by the instillation of a silver nitrate solution in the eyes of new-born infants. While the remedy is simple and effective, recognition of the vital importance of making this method of prophylaxis a required routine was obtained only after prolonged, tireless effort. Members of the medical profession, fearing that they might offend their patients by the implications of immoral living which attach themselves to ophthalmia neonatorum, hesitated to suggest the use of the drops and were slow to urge the acceptance of this precaution. It must be pointed out that while two thirds of the cases of ophthalmia neonatorum are of gonorrheal origin, one third of the cases arise from simple catarrhal vaginitis, which has no immoral implications.

The results of this great accomplishment should inspire all interested in human rights to fight for the preservation of sight and the removal of all forces that destroy it. Too long have we been content to marvel at the way blind people compensate for the loss of sight. Too often have we prided ourselves on the excellent schools, homes and workshops for the sightless. Too ready are we to ameliorate the consequences of blindness by generous provision for aid, relief and pensions. Too eager are many to work *for* the blind, making braille books, buying guide dogs, supplying white canes and other labels marked "handicapped." I do not mean to disparage these efforts for they are all well intended, but they are begging the question. And at times one is tempted to cry "away with all these things, and attack blindness itself as a form of destruction that should not be!" Let us stop salving our consciences with compensations to blind persons and ask ourselves what right have we to permit any man, woman or child to be deprived of the right of sight when we know three fourths of blindness is preventable!

Sight is a God-given gift and an inalienable right. After examining and operating on many defective eyes, a famous ophthalmologist once said, "The first right of a blind person is not to be blind." Certainly the first right of a seeing person is to retain his sight. To do this, however, it is necessary to be vigilant, careful and unrelenting in all measures to conserve this inalienable right without which "life, liberty and the pursuit of happiness" are but futile quests.

THE RIGHT OF SIGHT REQUIRES

1. Drops administered at birth of every child.
2. The eyes of all children regularly and periodically examined and tested.
3. Corrective glasses scientifically prescribed and treatments given as needed.
4. Sightsaving classes organized for children with defective vision.
5. Children's sight safeguarded from accidents, especially from fireworks.
6. Campaigns for safety in industry and explicit observance of rules by all workers.
7. Avoidance of marriage or at least of parenthood by persons with transmissible causes of blindness.
8. A blood test before marriage.
9. Blood tests as a routine part of prenatal care with treatment when necessary.
10. The support of every movement aiming to conserve sight as an inalienable right.

FOOD IN FOREIGN COUNTRIES

Century Photo

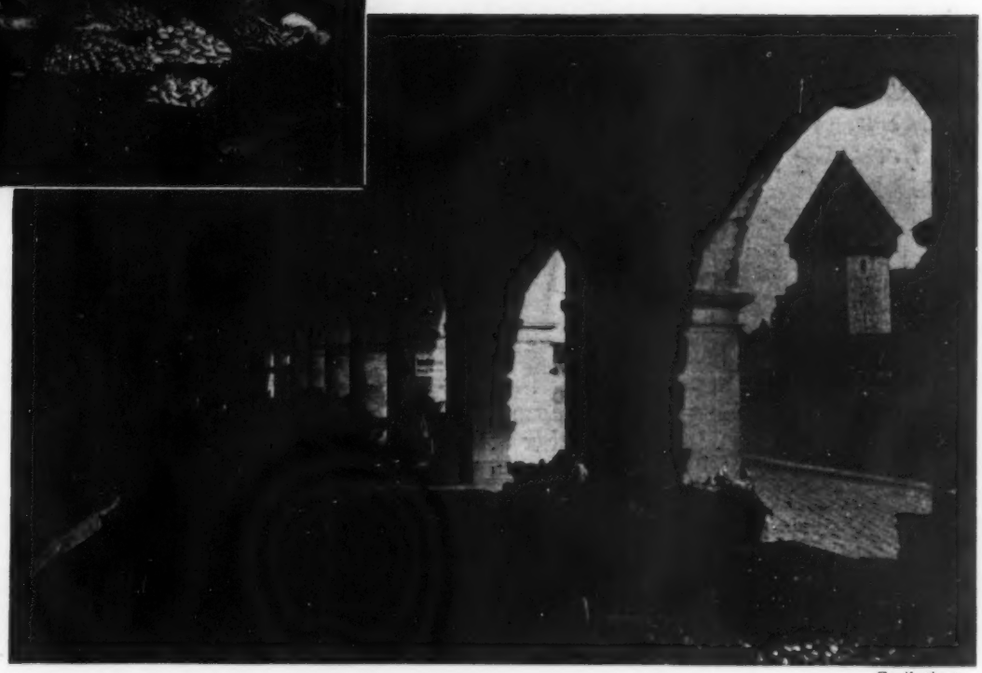
VEGETABLES FOR THE MOROCCAN MARKET ARE SOLD BENEATH THE TREES.

Century Photo

IN NAPLES, BREAD MAY BE BOUGHT IN THE OPEN AIR AND SELF SELECTED FROM A STACK OR BASKET OF THE PASTRY, AS THIS CUSTOMER IS DOING.

Century Photo

TURKEY PURCHASES ITS FOOD FROM OUTDOOR MARTS LIKE THESE; HERE THE WHOLE FAMILY HAS TO LEARN THE TECHNIC OF SELLING VEGETABLES.



Emil Goetz

LUCERNE, SWITZERLAND, STILL CLINGS TO ITS PICTURESQUE MARKET HALLS ON THE BORDER OF THE RIVER REUSS.

DYSENTERY—One of the Dangers of

BY JOSEPH FELSEN

MUCH publicity has been given the Chicago World's Fair outbreak of amebic dysentery. The average person concludes after a bit of thought that perhaps after all the best place is home. That person is about nine-tenths right and one-tenth wrong. Amebic dysentery is not nearly so common in the United States as bacillary dysentery, and yet one hears little about the latter. Few persons know of the scattered cases or sporadic outbreaks that are ever present, ready to flare up at any time.

As soon as an outbreak blows over, we tend to lapse into a feeling of smug complacence unless perhaps it removes some one dear from our midst. Even then, individual hopefulness or ignorance, plus the lapse of time, lulls us once more into the customary feeling of security. Being human, we like to forgive and forget. The Romans had a name for it, "experientia docet," meaning experience teaches; but sad to say only a few of us learn our lessons well.

All of us are more or less fatalistic; we must be if we are to maintain our mental equilibrium. And, strangely enough, the Orient, that part of the world where fatalism dominates life, is also the most prolific source of bacillary dysentery. It is easy to understand why people working in fields irrigated and enriched with human excrement or drinking polluted river water contract the disease. Bacillary dysentery used to be considered a disease of the tropics. That this belief is erroneous is shown by the wide dissemination of dysentery all over the globe. Even the polar regions are not free from it. It was formerly referred to as summer diarrhea, but careful studies have shown frequent outbreaks, in fact some of the worst ones, during the winter. Armies furnish victims in prolific numbers, as witness the epidemics during the Crimean War, the Civil War, the Franco-Prussian War, Russia's wars with Turkey and the Japanese, the South African War, the World War and, more recently, the Italo-Ethopian conflict.

We can find some excuse perhaps for the widespread nature of the disease in regions or under conditions where proper sanitary facilities are lacking or impossible. But what place has dysentery in a civilized community which boasts of sewage systems and filtered or chlorinated drinking water? Whether the germs have remained dormant in the soil, as at Chalons, France, where soldiers were infected by camping over an old dysentery site, or whether there is a break in a modern sewer line, the explanation is the same. The germs *always* come from the intestine of a person with the disease and are transferred to the mouth of another person who subsequently comes down with the disease. It is a case of literally living from hand to mouth.

Cooks, waiters, nurses and others innocently transfer the germs by means of their hands. Now, thorough washing of the hands with soap and water after attending to personal needs should theoretically eliminate contact or transference infection. Of course, not every germ on the skin can be removed with soap and water. It is common knowledge that even the surgeon who by a special, painstaking technic scrubs up for an operation never kills all the germs on his skin or under his finger nails. He plays safe by putting on a long sleeved sterile gown, rubber gloves or even gauntlets. For all practical purposes, however, the liberal use of soap and water and an individual towel are sufficient protection.

There is another angle to the situation which has to do with the one-tenth chance taken by those who stay at home. If some one contracts the disease in a restaurant or while swimming, there is nothing to prevent him from giving it to every one else in the family. This is particularly important because he may not feel sick at all during the first few days, but it is during this period that the germs are discharged in the excrement. Luckily, cramps or the appearance of a little blood will frighten the victim, and he quickly calls the family doctor. Now if every mother, who is usually the first aid nurse, would promptly isolate the patient and wash her own hands thoroughly after each contact, there would be little danger. In the absence of these simple precautions the disease is apt to run through the whole family. It is a safe rule to isolate any one with diarrhea until the excrement is found to be free from dysentery or similar germs.

THE lesson for the summer vacationist is clearcut. Eat clean food, drink clean water, boil them if in doubt and steer clear of any places where the people have "intestinal disturbances." Pay no attention to "Why that's nothing, all the people get diarrhea when they first come here." The manager of a hotel recently told that to a wealthy patient who contracted bacillary dysentery. In that particular winter resort, rain water from a reservoir served as the main source of drinking supply. The entire party, including the manager himself, was involved.

Living from Hand to Mouth

If you are going on a cruise, use the same precautions on board ship and on shore trips. There is no more reason for outbreaks of diarrhea on board ship than when you are in your own home. Moreover, don't try to mimic the natives—they probably are immune to the disease. Eat plain, good, old-fashioned American food, preferably boiled. And—wash your hands!

Now, one other bit of advice to the eager vacationist who wants to remain happy: When it comes to swimming, remember that the same rules apply as to drinking water. Do you know that some large cities are compelled to draw their drinking water supply from the river or lake into which they empty their sewage? There's no danger as long as the water is filtered and chlorinated. Of course the more the pollution, the more the chlorine necessary to make the water safe. If you don't like chlorinated drinking water, boil it or drink one of the well known brands sealed in bottles. Avoid a swimming pool that is too crowded for if enough chlorine is put in to render it safe it will irritate your eyes and throat. And if not enough is used, you are better off in your own clean bathtub or shower. Go to the pool early in the

THOROUGH WASHING OF THE HANDS WITH SOAP AND WATER USUALLY PREVENTS TRANSFERENCE OF THE INFECTION.

morning when the swimmers are few. Keep away from the open cesspools around some of our big cities. It takes more than ocean tides to keep these rivers or beaches permanently clean. If you are a skeptic take a ride on the ferry boat and watch the water for floating excrement. Bacteriologic tests for human intestinal pollution will confirm your suspicions. Now if you're on a hike or in some out of the way place, a simple expedient is to boil the drinking water or make tea of it. Take a photograph of the old oaken bucket that hangs in the well, but don't drink out of it. And remember that by observance of these few simple precautions you may avoid not only dysentery but also its cousin, typhoid. Don't be too boastful or careless because you were vaccinated against typhoid. It might still get you and lay you up even if it doesn't kill you.

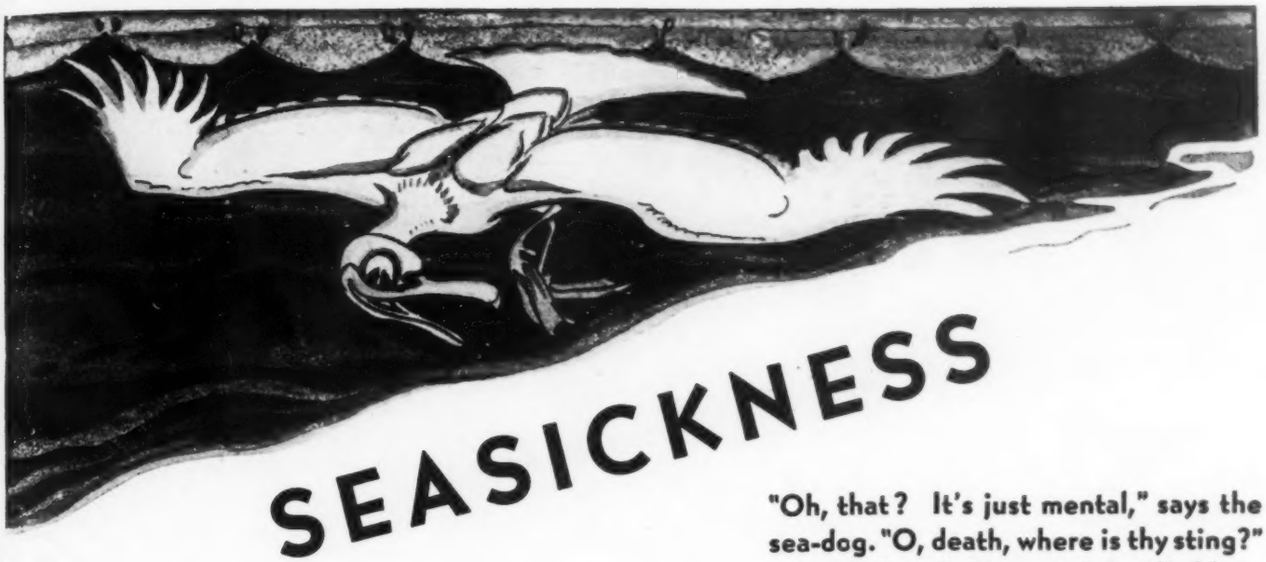
THERE is still another angle to this problem before I offer a solution. The more publicity given to outbreaks of bacillary dysentery, the sooner they end. But what actually happens? The business people and politicians only too often put pressure on their health officers and try to stifle reliable sources of information. "Epidemic? Why we have no such thing!" Dissemination of accurate news might drive away trade. Foolishly, like the ostrich who buries his head in the sand, their intrigue perpetuates the very disease they are endeavoring to escape. Cities or towns are not the only malefactors. Institutions run by people who should know better are sometimes as bad. They fear a lawsuit or "don't want to scare the family." Well, who wouldn't be scared? No one likes to have a healthy or sickly member of his or her family contract a disease which might result fatally and which is directly traceable to negligence at such an institution. Doing all they can *after* the damage is done is nothing compared with what they could have done *before* the outbreak. Sometimes a simple economic factor lies at the basis of all the trouble. Happily, at one institution in New York City the expedient was hit on of *paying all employees for staying home* whenever they had diarrhea, until they were released from isolation by the doctor. Formerly they did not even report sickness until it was too late to prevent spread of the disease. The reason was that they feared pay deductions for time off.

The contraction of a disease which has a mortality rate of about 2 per cent in this country and a much higher one in the Orient is bad enough, but during the last few years it has become apparent that the disease is appearing in new, hitherto unrecognized forms. That means the diagnosis is being missed until such time as this knowledge becomes more general. Again, it is becoming a routine procedure to keep track of dysentery patients, which means obtaining a "follow-up." This is an important phase of modern medicine. It is wise not to use the term "cure" indiscriminately. If a patient is followed up long enough a certain number of so-called cures will diminish, particularly in dysentery. Of course, as soon as a patient feels better he is glad to rid himself of the doctor even though ulcers may still remain in his intestine.

IT WAS found that under carefully controlled conditions about 90 per cent of patients with acute bacillary dysentery recovered completely, while in a little more than 10 per cent, chronic dysentery developed before the end of the first year. And, moreover, the chronic dysentery took the form of one of three diseases which had hitherto been regarded as separate and distinct entities: ileitis, ulcerative colitis and intestinal granuloma. Restudy of a separate group of the last named diseases showed that at their onset every one had been acute bacillary dysentery. Owing to the lapse of time the original disease had been forgotten.

These scientific names merely indicate inflammation of the small or large intestine. A more popular though somewhat misleading title is colitis. The investigations which in their logical sequence led to these observations are of no particular interest to the reader. What is important, however, is that once chronic ileitis or ulcerative colitis has developed, it is resistant to treatment. The patient is often completely incapacitated, miserable and poverty stricken from his efforts to secure relief. Although definite progress has been made in this regard, how much easier and better it would be to prevent bacillary dysentery.

Today medical science can offer definite means of prevention in the field of bacillary dysentery. Its cause and method of control are known. There is no plausible excuse for any outbreaks in our country with its rich resources and modern sanitary facilities. A little money spent in controlling the disease at its source, in scientific research and in health education would repay rich dividends in the form of human lives saved and the prevention of chronic invalidism.



SEASICKNESS

"Oh, that? It's just mental," says the sea-dog. "O, death, where is thy sting?" moans the disillusioned landlubber.

BY ROBERT TOUBIB

IN THE ponderous "Hydrographie," which contains all the nautical knowledge up to the middle of the seventeenth century, Father Fournier achieved the discussion of seasickness with the following dictum: "There is no remedy. It is necessary to pay the tribute and console oneself that no one dies of it." And after 300 years the father's fallacies live on; nevertheless, at least in most cases, a remedy can be found, and not infrequently one does die of the condition.

But even if it were true that the malady is never fatal, what a poor consolation for the victim of severe seasickness when wretchedness attains a degree which makes him echo the thought: "O death, where is thy sting? O grave, where is thy victory?"

A more up-to-date consolation is furnished by Dr. J. Bohec, physician in chief of the *Ile de France:* "The relatively immune to naupathia are: those with high blood pressure, the feverish, the deaf and dumb, tabetics, rope walkers, acrobats, dancers, the insane, and young children."

Seasickness is of immense importance to any one who is ever going to sea; that is, almost everybody. Yet information about this malady is most difficult to obtain. It is especially important to acquire a basic understanding of seasickness while still safe on terra firma, because if an individual attempts to learn about the condition while being rocked on the deep, his very effort at understanding may focus his attention on the condition to an extent that will actually increase his susceptibility.

On the other hand, if this knowledge is obtained beforehand, it may materially aid the traveler through his first voyage without becoming seasick. He will then catalogue himself among the immune, and in most cases he will be able to remain in that fortunate category for his lifetime.

Seasickness is generally used to include the more comprehensive term "motion sickness," because the same symptoms may result from the motion of a train, an automobile, an aeroplane, a camel or even the porch swing. Of all maladies, seasickness must have the record both for the number of theories as to cause and for the diversity of methods of treatment. More remarkable are the facts that most of the theories are right—in part, and that all the treatments, no matter how ridiculous they may seem, work—sometimes. Thus, wearing a piece of brown paper against the skin of the chest has given excellent results in some cases; while the only treatment known that never fails is the

most absurd of all: lying in the shade of a large oak tree.

Riding a camel frequently causes motion sickness, while riding a horse rarely, if ever, does. Of course, the camel causes more lateral motion to the rider than does the horse. For some, this fact is proof of the labyrinthine theory of seasickness. This theory attributes the condition to abnormal continuous stimulation produced by unceasing change in equilibrium acting on the semilunar canals of the internal ear.

Logically, treatment based on this theory proceeds along two lines of thought: first, reduce lateral movement to a minimum; second, decrease the sensitivity of the labyrinth by the use of drugs.

In order to reduce lateral movement, expensive stabilizers are built into some modern ships, and bunks are often suspended so that the sleepers (or patients) remain in a comparatively horizontal position regardless of the gyrations of the ship. These precautions have proved of some value.

The *reductio ad absurdum* of this idea was the English Channel ferry-boat, the *Calais-Douvre.*

It appears that this vessel was equipped with a suspended saloon, swinging staterooms and always-upright armchairs. This all proved a failure because the irritation of the labyrinth, though important, is only one element in the production of seasickness.

Even the different effects from the gaits of the camel and the horse are not conclusive, because the horse rider may sustain his circulatory system by greater muscular effort, just as the excitement of the roller coaster, in spite of the intensive lateral movements, usually prevents motion sickness during the run. Immediately afterward, however, the sudden development of symptoms is common.

As for the failure of the *Calais-Douvre,* the English nation seems to be divided into two distinct groups: those who read their literature and consequently become seasick on the channel as the result of a sort of cultural obligation, and those who do not read and rarely get sick. I base this theory on a crossing of the channel when the water was like a mirror and I could hardly register the slightest movement even when I drew a bead on the horizon over a nailhead in the guard rail. Nevertheless, when I went below I found the respectable islanders just as sick as prescribed by their noblesse oblige.

THE kinesthetic theory of seasickness incriminates the accumulative action of impulses produced by the continuous change in muscular tone necessary to maintain balance at sea: the change in tension of the diaphragm as the ship rises and falls, the shifting of body weight when the ship rolls, and the complete dependence of the individual at sea on his kinesthetic sense to maintain equilibrium when, on land, the visual sense can assume some part of his balancing function.

It can be readily understood that those with flabby musculature would be relatively more susceptible to kinesthetic influences and that active children and athletes are less likely to suffer. By the same token it is recommended that the business of "getting one's sea legs" be taken seriously, so that following the motion of the ship, inspiration when the rise of the vessel pulls down the diaphragm, expiration, when the ship falls, and the other necessary movements are all quickly relegated to the subconscious and hence become nonirritating.

In addition, abdominal support may be advised for some while in the vertical position, and when necessary, kinesthetic action may be reduced to a minimum by the patient lying flat on his back.

THE gravity theory is a sort of microscopic corollary of the kinesthetic theory. Its backers point out that the body is made up of substances of various densities and is therefore not constituted to withstand rapid and repeated variations in the action of gravity. This action causes shock to the body cells, a gravity shock comparable to shock which may be produced by another physical agent, such as cold, the x-rays or trauma.

The ocular theory stresses the fatigue of the eyes in following a world in continuous motion. As might be expected, those who have "eye troubles" are particularly sensitive to this action.

The procedure in such cases is evident: Correct the "troubles" or exclude the abnormal stimuli by closing the eyes.

All these theories have this in common: The movement of the sea subjects the body to abnormal continuous irritation. From the eyes, ears, muscles, organs and body cells, unaccustomed stimuli continually bombard the nervous system of the victim until his nervous resistance is broken down at its weakest point.

Frequently, reenforcing the attack of these irritations directly due to motion, there may be secondary irritations: bad smells of tobacco, food, smoke, grease, gasoline, urine or vomitus; the sight of fellow passengers feeding the fish, or the hearing of odious details, in which some shipmates revel.

It was the secondary irritations which almost overcame me on my first sea voyage. On my way to my internship in Panama I was assigned a stuffy inside room down in the bowels of the ship. The propeller shaft jarred me, the toilet across the passage stank, and my seasick roommate completed a gamut of unpleasant irritations which, at the time, I did not consider "secondary."

All these irritations combine to produce shock, and it is this shock which is called seasickness. Often it begins by a primary stimulation of the sympathetic system. For a moment the individual "feels fine," wants to eat. Then the parasympathetic system is attacked, and the victim experiences the typical reaction of shock: vertigo, nausea and vomiting. His blood pressure falls, his pulse becomes fast, and his face takes on a putty-like, slightly greenish hue. The condition may last only a few moments or may continue indefinitely, depending on the ability of the victim to reestablish his nervous equilibrium.

In those who continue to be seasick, even mildly, acidosis soon develops; and since the latter condition is a constant observation in severe seasickness, the acidosis theory of seasickness has been created. But acidosis is the result, not the cause of the disease. Acidosis appears because the patient does not eat, or because he vomits all he is forced to eat. Then acidosis itself will cause nausea and vomiting, thus completing a vicious cycle. Naturally all such cases respond to antiacid treatment, such as sodium citrate by rectum and dextrose by rectum or intravenously or, when it can be tolerated, by mouth. A simple and pleasantly effervescent antiacid drink is made by the addition of sodium bicarbonate solution to a lemonade.

But to all this, the sea-dog will say: "Tommy rot! Seasickness is all mental." To which the landlubber will reply: "If it's all mental, why are animals sometimes seasick?" Curiously, both are right—sometimes. The following experiment will illustrate:

To study the reaction of animals, dogs were put on a platform which was made to move to simulate the motion of a boat. The dogs soon gave an excellent reproduction of human seasickness. This time the landlubber is right. There's nothing mental about that! The next day the same dogs were again put on the platform. There was a delay, and before the platform was put in motion the dogs began to vomit. This time the sea-dog is right. The fear of seasickness was sufficient to induce the condition.

But is not fear itself merely an additional abnormal stimulus, a stimulus which alone frequently produces shock? Why should it not complement the stimuli already mentioned in the production of the shock we call seasickness? Not only does it do this, but it, alone, may induce symptoms.

Many cases are on record in which the victims, fearing they would be seasick, turned in when the ship was alongside the dock and were sick during the night though the ship did not put to sea. Such cases, the dog experiment and the cultured English on their channel all prove the importance of the element of fear in the production of seasickness.

Based on what has gone before, it is reasonable to conclude that seasickness is not a specific disease with a specific cause but that it is shock resulting from an abnormal stimulus or a combination of abnormal stimuli which are directly or indirectly the result of going to sea. This shock may be prolonged and aggravated by acidosis.

If seasickness is accepted as shock, the shortcomings of the commercial remedies for the condition are automatically explained. A case in which the weak point is an uncorrected refractile error does not respond to the same treatment as does that of a woman with a pendulous abdomen, a man with a gastric ulcer or the nervous lady who "just knows she is going to be deathly sick."

Most, if not all, of the patented seasick remedies are merely sedatives intended to decrease the sensitiveness of the nervous system to the various seagoing irritations. Mental confidence is usually bolstered by having the pills two different colors and making a great point that "a pink one must be taken first, a blue one after exactly two hours," and so on.

Once I permitted my wife to try one of the most popular of these patent drugs. For the first two days of a North Atlantic crossing I faithfully gave her pink pills and blue pills as directed. My spouse was not seasick; she was not alive enough. Gradually she lapsed into a state which, to me, too closely resembled coma. In the meantime I had charge of our three children aboard. One child was a very young baby. The third morning I dropped the remaining pink and blue pills out the port and took over the treatment. My wife took over the baby.

Since seasickness is shock, the preventive measures should follow the same logic as does a surgeon when his patient is to undergo an operation likely to cause shock. Every surgeon knows that a well regulated digestive tract and an excellent physical condition decrease the danger of shock. Contrary to the custom of many about to go to sea, the surgeon does not prescribe one or several alcoholic parties for his patient before an operation, nor does he overload his patient's stomach with tidbits in the form of farewell gifts.

Once aboard a modern passenger ship, one frequently yields too completely to the first temptations of a luxurious menu. In these cases gastric irritations are likely to appear at the most critical moment of a sea voyage. It has already been pointed out that it is particularly important that a passenger not become sick on his first voyage.

Permanent physical defects are less frequent though more serious than temporary disturbances. In the Navy it is not uncommon for a victim of seasickness to make the happy discovery that his susceptibility has greatly decreased or entirely disappeared following the removal of a chronically diseased appendix or a diseased gallbladder. Accordingly the prospective victim of seasickness should present himself aboard in the best possible condition. If unhappy experiences have raised his fear to the danger point, small doses of sedative and large doses of encouragement are in order. He should frequent the midships, because the motion of this part of the vessel is less marked. It is to his advantage to take an active interest in his environment and to accustom himself to the movements of the ship in order to get his sea legs as soon as possible. He should try to avoid the secondary irritations, and when a group of fellow passengers takes up the subject of seasickness, he should discover another group or another subject.

A little excitement is highly effective in raising the spirits and in sustaining the blood pressure. The wise ship's captain can easily provide excitement in the form of a fire drill or a boat drill because, as pointed out by Dr. Bohec: "Seasickness often disappears sometimes permanently, under the activities and excitement of an emergency. A new shock reestablishes equilibrium in the vagotonic crisis." It is most significant that seasickness seems never to play an important part in a naval battle.

Perhaps this treatment of shock by countershock accounts for certain successes of Solomon Solis Cohen, who wrote: "I have seen severe attacks cut short by a calomel purge followed by a thorough saline irrigation of the bowels."

Dr. Bohec recommends the logical employment of rest, exercise and antiacid treatment to suit the needs of the individual case. To stimulate the sympathetic system and sustain the blood pressure he prefers a belladona preparation to the more commonly used atropine whose action is too transient. It seems logical to use one of the newer circulatory stimulants like ephedrine. Among the myriad drugs used to maintain nervous equilibrium and decrease the sensitivity of the nervous system are epinephrine, the nitrites, barbital preparations, the bromides, chlorbutanol, chloroform water and even morphine. These drugs should be administered under the direction of a physician.

Nourishment should be frequent but in small amounts, showing the logic of the numerous bouillons and teas with the accompanying crackers which are served to passengers. Champagne and fruit juices are acceptable, but black coffee, red wine and tobacco are distasteful both to the sick and to the susceptible. And why are boiled dinners served just when the passengers are trying to get their sea legs?

To resume, seasickness can usually be attenuated if not actually cured by reasonable preparation for the shock of a sea voyage, an optimistic mental attitude, a conscientious effort to get one's sea legs and the logical employment of sedatives, antishock and antiacid treatment.

Dr. Bohec closes his excellent study of the condition with this warning: "We must be skeptical of seasickness which is refractory to careful treatment, because the patient is probably suffering from organic disturbances requiring special attention."

THE PRESCHOOL CHILD IN HOT WEATHER

WHEN THE sun glares bright and hot throughout a long summer day and the nights are breathless the proper care of a small child is of greatest importance to his happiness and his health. With intelligent supervision the summer, more than any other season of the year, offers opportunities for freedom and development, but in no other season are there so many dangers resulting from improper care.

The routines best adapted to other times of year need to be changed during the hot weather. Sleeping and eating hours should be adjusted to daily range in temperature rather than to the schedule which has been followed in more moderate weather. The small child needs as much sleep during the summer, but his hours should not be the same. It is cruel to put a child to bed at 7 o'clock daylight saving time and allow him to toss and fret until he is exhausted before it is cool enough to sleep. The sleeping room should have time to cool after sundown before the child is put to bed. He may, however, sleep late in the morning, and he should have a long nap in a darkened room in the afternoon.

The place where the child sleeps should be carefully chosen. Often a folded comfort on the floor makes the most comfortable bed, and a small child never needs a pillow. A strong breeze from a fan or an open window should not be allowed to blow directly over him, or he will probably awake with a sore throat and cold. If a fan is used it should be directed against the side of a wall from which the air is gently deflected in the direction of the crib.

The general plan of the day might be arranged as follows: breakfast at 10 a. m. followed by a period of play consisting of games requiring active exercise. Lunch may be served at about 1 p. m., after which the child sleeps or rests in bed for at least an hour. After this the activity should be somewhat restricted during the hottest part of the day. Light refreshment may be given at about 4 o'clock with the main meal of the day at 6:30 or 7 o'clock. It is quite safe to give this in the evening since the child will not go to bed until perhaps 9 o'clock.

The arrangement of the menu for hot weather deserves special consideration. The child who sleeps late in the morning will be likely to have a good appetite and will eat a hearty breakfast. This should consist of fruit juice, cereal, toast and an egg if he cares for it. The fruit juice should be cool but never iced when served with a meal, as the low temperature retards digestion. The prepared cereals are thoroughly cooked, readily digestible and are more appetizing in hot weather than a bowl of thick gruel. If the child is not hungry for breakfast, give him a glass of fruit juice and milk, and allow him to play until lunch time, when he will eat a heartier meal.

FOR lunch and dinner fresh vegetables should lead in the menus. Little meat is required, and that should be of digestible and nonfatty varieties. Jellied veal and chicken fit well into the summer menu. Lamb and beef are also suitable, but pork in any form, either fresh or as ham, should be avoided. Spiced meats, such as summer sausage, frankfurters and similar cold prepared meats, should be strictly forbidden to small children. Desserts of fresh fruits, cold custard or tapioca are good, and those made with gelatin are ideal as they supply easily digested protein and are always popular with the younger members of the family. While ice cream is a concentrated food and is highly nutritious, it is better not served with the regular meal because it retards digestion.

Eating between meals is a problem with which every mother of young children is confronted. When to allow lunching and what may be permitted are questions to be decided for each child if his digestion is not to be upset. To quench thirst, fresh lemonade or orangeade or canned pineapple juice used in reasonable

By VORHA BALIMAN HAFFNER

quantities is better than large amounts of tepid tap water. Carbonated waters are also reasonably safe as they consist of pure water which, after the addition of sugar, syrup, coloring and flavoring, has been charged with inert carbon dioxide to make it more palatable.

Ice cream is a valuable food in hot weather when certain precautions are taken. It should first be ascertained that it is pure. The bacterial content of ice cream is always higher than that of ordinary milk and cream, and it may be a carrier of bacteria which are harmful. Care should be taken to secure ice cream made by a dairy where strict attention is given to cleanliness and from a dealer who does not keep it long and who uses clean utensils to dispense it.

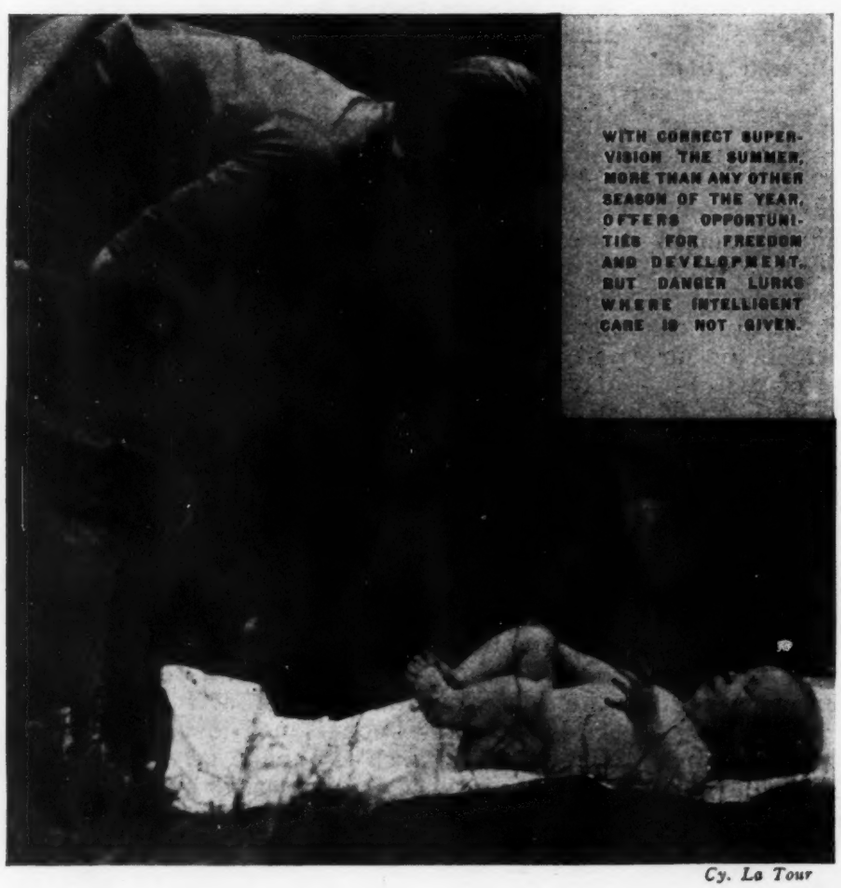
Whenever possible, ice cream should be served at home where it can be eaten from clean dishes with clean spoons. When ice cream is bought in a public place, such as a park, the packaged varieties which are put up in containers at the dairy where made are safer than that which is dipped from cans with dippers which are merely rinsed in luke warm water and often swarming with flies. When patronizing a soda fountain, note how the glasses are washed and the condition of the drying towels. It is always safer to drink from a straw than directly from a glass. Another test for ice cream is to allow some of it to melt and become warm and then taste it. The true flavor is then apparent. The sense of taste is partially paralyzed with the frozen mixture, and we often find that the ice cream which we enjoy is really not fit to eat. It should taste as fresh and sweet when melted as in the frozen state.

It is quite safe to give a dish of ice cream to a small child in the middle of the afternoon, but one serving a day is sufficient.

There are some cold drinks which should never be given to a small child. These include iced tea, coffee, beer and any of the so-called soft drinks that contain stimulants.

Frozen ices are often so strongly flavored that digestion is disturbed, although they are generally of about the same composition as the carbonated waters. They should never be allowed near mealtime or for an hour or two after a meal.

Summer affords many opportunities for outings and for longer vacations away from home. Whenever the outing is for a single day it is best to plan to take along the child's food for the day. In this way he can better follow his accustomed schedule of eating, in regard both to time and to kind of food. With proper packing, his meals may be quickly and conveniently prepared. Puréed vegetables can be carried in their original cans and iced milk or chocolate milk in vacuum bottles. Another vacuum bottle of boiling water may be used to heat other food by putting eatables in a container surrounded by hot water. Experience has shown that food keeps better when it is carried as cold as possible than when it is preheated and placed in vacuum bottles. "Canned heat" may also be used to heat the food, but it is more dangerous because of the fire hazard. It is well to carry a jug of ice water for drinking rather than to rely on water of unknown purity. It is also convenient to have it when it is wanted rather than to listen to the chorus of "I want a drink" until a suitable stopping place is found. When one does not have drinking water along it is preferable to drink bottled water or soft drinks which are bottled under sanitary restrictions than to drink water from an uncertified source.


WITH CORRECT SUPERVISION THE SUMMER, MORE THAN ANY OTHER SEASON OF THE YEAR, OFFERS OPPORTUNITIES FOR FREEDOM AND DEVELOPMENT. BUT DANGER LURKS WHERE INTELLIGENT CARE IS NOT GIVEN.
Cy. La Tour

Sometimes it is necessary to eat at a restaurant—and every parent breathes a prayer that home training of table manners will be remembered and that no "accidents" will happen. The menus often present a problem when ordering for a child. Many of the foods offered are unsuitable either because of variety or because they are served so that it is

difficult for the child to feed himself. Many of the meats and sauces are highly seasoned and are therefore unfit for small children. Usually a vegetable platter with at least two vegetables which the child will eat can be ordered, and he can always have milk and a simple pudding for dessert. There are a few restaurants which offer special children's platters of suitable foods in small servings. These places are well patronized by grateful parents for in such establishments one receives courteous and sympathetic service from attendants.

When the small child goes away from home for a vacation of several weeks his diet should be even more rigidly supervised than at home, for his illness can soon spoil a delightful vacation. There is more temptation to eat unsuitable food between meals than at home. When one is a guest there is even less opportunity to select the proper diet. Before allowing the child to drink milk or water away from home one should be certain that it has been tested and approved in a good laboratory. The "nice fresh milk" from Grandpa's cows may contain deadly tuberculosis bacilli unless the cows have been tested. The cool spring water may be laden with typhoid germs. By all means enjoy the fresh milk and the cool water when they are properly tested, but until that is done it is safer to use canned milk and boiled water.

THE question arises as to just what the small child shall do when he is not eating or sleeping. His activities need as much supervision as does his physical care. It is scarcely necessary to mention that little clothing is required and that a coat of tan is a health reserve for the dark months. However, too much hot sunshine on little bare heads is not a good thing, and therefore a place for play should be chosen where the child is shaded part of the time. He should never be allowed to play for long in the direct sunshine during the hottest part of the day.

Because so little clothing and such simple garments are worn the child may engage in those messy activities which are forbidden in other seasons of the year. Water is essential to his happiness, nor is it necessary to have a lake, an ocean or even a creek to play in, for each child can have his private swimming pool by merely filling a galvanized tub with water. It should be tepid water to prevent chilling. Paddling about in such a "pool" is preferable to playing under a hydrant for that reason. It is more sanitary than the average public swimming pool, and there is little danger of drowning. Children will have more fun in a tub than in a larger body of water. An old saucepan or bucket with which to pour water over each other is an easily acquired piece of equipment, and splashing is a game which will keep them occupied for a long time. There should also be a sand box nearby, for water is necessary for the proper building of sand mountains, tunnels, rivers and lakes. Even a small yard will accommodate this equipment, and the children will have no desire to run into the street or tease to go to a beach where an adult must accompany them.

IF THERE is any space where it can be placed, a swing is a desirable piece of equipment, for nothing is more delightful to a child than sailing through the air in a breeze of his own making.

In the hot afternoons when little physical activity is desirable, blowing bubbles is an enjoyable game in which even the toddler will participate with glee. Each child should have his own bubble pipe with a bowl of rich, foamy soapsuds.

The long evenings after dinner afford an opportunity for the family to enjoy outings together in parks or in the woods or just riding in the cool evening air. It is a time when Daddy can romp and play with his children to their mutual delight. The child will develop a deeper love and understanding of his parents and, unless he is allowed to become overfatigued, he will go to sleep quickly when going to bed and will rest quietly all night.

In hot weather the most common illnesses among small children are gastro-intestinal upsets. These are practically always caused by dietary indiscretions, such as eating spoiled food or sour ice cream or too much fruit. Many mothers feel that fruit is good for the child and will allow him to eat all he wants of it. The skins of apples and peaches and the seeds of berries are very irritating to the intestinal tract and when taken in large amounts will cause diarrhea. Only moderate amounts of fruit should be permitted, and this should be thoroughly washed to eliminate any poisonous spray and inspected to see that it is neither too green nor overripe. If the child eats at regular times and the water and milk which he uses are pure, there is little danger of a serious bowel condition occurring.

THE child under school age should avoid exposure to the common contagious diseases as much as is possible. This can best be done by avoiding crowded beaches and parks where there are many children. Fortunately most of these diseases are not as common in the summer as in other months of the year.

Infantile paralysis, however, is an exception to the rule, reaching its peak between August and October. The epidemics frequently center about thickly populated bathing beaches. Since the virus may be carried in the nose and throat of healthy persons it is safest to avoid contact with others during an epidemic. Each child should have his own drinking glass for drinks between meals. He should be taught to use a straw for drinking when in public places.

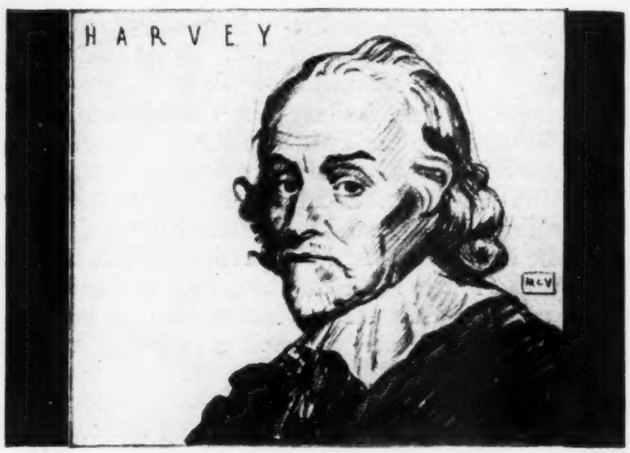
THE SEARCH for knowledge of how this body-mind machinery of ours is made and how it works is as exciting as the search for the earth's poles or the study of the materials and motions of the stars. Yet, although man has lived with his body for a million or so years he has but scratched the surface of the mystery of the living laboratory with which he experiments each day. Considering the difficulties of this study, however, he has made much progress since William Harvey published, 300 years ago, his 72 page book, "Motions of the Heart and of the Blood."

Long before the time of Harvey it was known that there was a movement, a flowing to and fro, of the blood; but its constant circulation from the chambers of the heart through the body and back to the heart was unknown, largely because it was impossible to see the myriad passageways, the smaller arteries and capillaries, through which the blood passes from the great arteries conveying it from the heart to the great vessels by which it makes its return.

Leonardo da Vinci, scientist as well as artist (1452-1519), from his observations on the movements of the heart of a pig discovered that this organ squeezed the blood from its cavities and that during this performance it became smaller in all directions.

Fabricius (1537-1619), the famous professor of anatomy at Padua, whose lectures were attended by Harvey, taught that the blood was manufactured from food by the stomach, whence it passed to the liver by way of the portal vein. The liver transformed the blood so received into a "living" fluid; that is, a fluid endowed with "natural spirits." This blood, he said, was conveyed downward from the liver to nourish the lower limbs through one great vein and upward to the head and upper extremities by another vein which passed directly through the right side of the heart.

Fabricius taught also that some of the blood filtered from the right side of the heart to the left. There being no visible openings in the septum, or partition between the left and right chambers of the heart, he believed that the blood reached the left ventricle from the right by a process akin to sweating. In the left ventricle this blood was mixed with air which had reached the heart by way of the lungs and pulmonary vessels, and the hot "vital spirits" were there concocted. This vitalized blood was sucked from the center of the body to the tissues everywhere by the forcible expansion of the heart and arteries and returned to whence it came by their succeeding contraction. The vital spirits ebbed and flowed like the tides but did not circulate. These ideas both as to the nature (or double nature) of the blood and of its movement were, of course, very vague.



Harvey was an English physician and as an investigator and discoverer has been compared to Sherlock Holmes and Christopher Columbus. He probably first stated his theory of the circulation of the blood in a lecture to the College of Physicians of London in 1615. Notes for a lecture in this year, chiefly in Latin, which was the official language of medicine in that day, have been translated thus:

> W. H. shows by the way the heart is made, that the blood is perpetually driven from the lungs into the aorta as by two clacks [valves] of a water bellows to rayse water. He shows, by means of ligature, the passage of the blood from arteries to veins. Hence it is demonstrated that the perpetual movement of the blood takes place in a circle, owing to the beat of the heart.

He had discovered that the heart was made and worked like a pump; that it forced the blood into the arteries; that it somehow passed from these vessels to the veins, and so returned again to the heart, to be sent out again on its travels.

The position and action of the valves of the heart and of the veins, and the behavior of the fluid in the veins of a limb in which these vessels had been tied, or ligatured, especially impressed Harvey and led to his reasoning as to the action of the heart and the circulation of the blood.

Harvey could not actually follow the blood in all its travels for it was impossible with the means at his command to see the passages for blood between arteries and veins. Servetus (1511-1553), physician and philosopher, had previously taught that these passages existed, and he came near anticipating Harvey's ideas. The compound microscope had but just been invented, and it remained for an Italian, Malpighi, in 1661, four years after the death of Harvey, to see in a dried lung of a frog the delicate capillaries which convey the blood from arteries to veins in its passage from one side of the heart to the other.

Actual flow of the blood from vein to artery in a living animal was first seen and described by Leeuwenhoek, a lens maker and biologist of Delft, in 1686. He watched this wonderful sight in the capillaries in the tail of a frog more than half a century after Servetus and Harvey reasoned that it occurred.

The pressure to which the blood in the arteries is subjected by the action of the force pump, the heart, was first measured by Stephen Hales, a genial English country clergyman, in 1733. The experiment is described in the following manner in his book "Haemastatics":

> In December I caused a mare to be tied down alive on her back . . . having laid open the left crural artery [in the hind leg] about three inches from her belly, I inserted into it a brass pipe whose bore was one-sixth of an inch in diameter; and to that, by means

> of another brass pipe which was fitly adapted to it, I fixed a glass tube, of nearly the same diameter, which was nine feet in length; then untying the ligature on the artery, the blood rose in the tube eight feet and three inches, perpendicular above the level of the left ventricle of the heart; but it did not attain to its full height at once; it rushed up about halfway in an instant, and afterwards gradually at each pulse, 12, 8, 6, 4, 2, and sometimes one inch; when it was at full height, it would rise at and after each pulse 2, 3, or 4 inches; and sometimes it would fall 12 or 14 inches; and have there for a time the same vibrations up and down, at and after each pulse, as it had, when it was at its full height; to which it would rise again, after 40 or 50 pulses.

Hales experimented in both plant and animal physiology, invented a useful surgical instrument and devised a ventilator (a modified organ bellows) for conveying fresh air into jails, hospitals, ships' holds and other closed places. The mortality in the Savoy prison is said to have been greatly lowered by this means of reducing the foulness of its air. Hales also suggested a process for distilling fresh water from sea water which was of great benefit to sailors.

In the time of Harvey, air and blood were believed to be mixed and turned into hot "vital spirits" in the left ventricle of the heart. When this blood was drawn by the suction of the expanding arteries into the tissues, it became loaded with "sooty vapors," which were discharged from the lungs when the blood was returned to that region. The heart was a combustion chamber, and the lungs surrounding the heart were believed to be for the purpose of keeping the heart and blood from becoming overheated, the greater part of the air taken in being for this purpose. There seemed good evidence for this in the fact that the heart was surrounded by the lungs and that the air returned from the lungs was ordinarily much warmer than that taken into them. We now know that only about 1 per cent of the heat of the human body is discharged from the lungs, most of it escaping by the skin.

The physiology of respiration waited on the advance of chemistry, and it was 200 years after the time of Harvey before the real use of the lungs was worked out.

The Hon. Robert Boyle, an Irish chemist, in 1660 placed a lighted candle under a bell jar, drew out the air with the recently invented air pump and observed that the candle went out as the air was exhausted. He placed a live mouse under the jar and on extracting the air found that the life of the mouse also went out. It was thus proved that air was necessary to life, but where or how it was used by the body was not explained.

In 1668, John Mayow, an English physiologist and chemist at Oxford University, placed a lighted candle under one jar and a mouse under another and found that in time they both expired without the use of an air pump.

Evidently both had exhausted something in the air which was essential to their combustion.

Meanwhile in 1665, Dr. Richard Lower of Cornwall had observed that the blood changed color in passing through the lungs.

In 1667, Robert Hook, who described and named the "cell" as a microscopic unit of body structure and made other important studies, showed before the Royal Society of London a dog from which the ribs and diaphragm had been removed and which could not therefore breathe, but which he kept alive by blowing air in and out of its lungs by means of a bellows attached to its windpipe. By pricking holes in the lungs he showed that it was "not the subsiding or movelessness of the lungs that was the immediate cause of death, or the stopping of the circulation of the blood through the lungs, but the *want of a sufficient supply of fresh air.*" The dog lived with the continuous flow of air.

By 1674, John Mayow had reached the following conclusions:

> Air contains certain particles, termed by us elsewhere as nitro-aerial, which are absolutely indispensable for the production of fire, and . . . these in the burning of flame are drawn from the air and removed, so that the latter when deprived of these particles ceases to be fit for supporting fire. . . . With respect to the use of respiration, it may be affirmed that an aerial something, whatever it may be, essential to life, passes into the mass of the blood. And thus air driven out of the lungs, these vital particles having been drained from it, is no longer fit for breathing again. . . . Hence it is manifest that air is deprived of its elastic force by the breathing of animals very much in the same way as by the burning of flame. And indeed we must believe that animals and fire draw particles of the same kind from the air.

Mayow believed that combustion took place in the muscles as well as in the lungs, but all his discoveries and ideas seem to have been lost for a century in the theories of "phlogiston" which arose at about this time, and it was still generally believed that the lungs were for the purpose of cooling the heart.

In 1754, Joseph Black, Glasgow University, discovered that when limestone was burned a gas which he called "fixed air" was given off; that this gas caused a solution of quick lime to become cloudy; that air in which a candle had been burned produced the same effect on the lime water, and that air from the lungs produced the same results and hence contained "fixed air," now known as carbon dioxide.

Joseph Priestley, an English clergyman, about 1774 found that air which had been exhausted of its life-sustaining properties by a mouse under a bell jar could be restored by growing plants in the jar. He also discovered that a candle burned more intensely, and a mouse lived and was active, in the gas given off when red oxide of mercury is heated. The old "phlogiston" theories died hard, and Priestly named this gas "dephlogisticated" air.

This gas was discovered at about the same time by Scheele of Sweden; and Lavoisier, the brilliant French chemist, soon after named it "oxygen" and also discovered the nature of carbon dioxide and the formation of water during combustion. In 1783 it was concluded by Lavoisier that the lungs were the organs from which the body received its heat and were not for the purpose of cooling the blood.

It is interesting in this connection that until a comparatively recent time, attempts were made to restore those who were asphyxiated, whether by water or by other means, by rubbing their bodies with salt. Thousands of persons have been saved by artificial respiration as the result of the knowledge obtained through a few experiments on mice and dogs, such as those conducted by Boyle, Hook and Mayow.

In connection with the study of digestion the work of Dr. William Beaumont is of great interest not only for the discoveries made by him but because of his example of persistent work carried out under great difficulties. Moreover, he was "the pioneer physiologist of the United States and the first to make a contribution of enduring value."

Beaumont was born in 1785 and died in 1853. He was commissioned an army surgeon in 1820 and was sent to a frontier army post at Mackinac.

In 1822, Alexis St. Martin, a 19 year old, "hardy, robust, and healthy" employee of the American Fur Company, was accidentally shot at a distance of about 3 feet, the charge of buckshot entering obliquely the left side of the abdomen, tearing a cavity extending into his stomach "large enough to admit a man's fist." He was cared for by Beaumont, and when, after a year had elapsed, the county authorities refused to pay for his care, the surgeon took St. Martin into his own family "from mere motives of charity and a disposition to save his life or at least make him comfortable."

In two more months the young man was "as healthy, active and strong as he ever was in his life, or any man in Mackinac" but with an aperture in his body through which an observer

could "look directly into the cavity of the stomach, and also see the process of digestion." Beaumont could "pour water in with a funnel, or put in food with a spoon, and draw them out again with a syphon." He wrote:

> I frequently have suspended flesh, raw and roasted, and other substances into the perforation to ascertain the length of time required to digest each; and at one time used a tent of raw beef, instead of lint, to stop the orifice, and found that in less than five hours it was completely digested off as smooth and even as if it had been cut with a knife.

Gradually it dawned on Beaumont that here was a wonderful opportunity for the investigation of the physiology of digestion. But he was a thousand miles from any laboratory and "the man with a lid on his stomach" proved far more difficult to manage than a dog or other laboratory animal. He had hardly begun his experiments when Alexis suddenly disappeared, and it was not until after long search that he was located in Canada. After four years' absence he was persuaded, at great expense to the surgeon, to return. Beaumont at once renewed his studies, and with "no laboratory equipment but a thermometer, a few open mouth vials, and a sand bath, he conducted at his isolated military post a series of observations on digestion which have not been excelled even under more favorable conditions and surroundings."

For some six years more he was able to continue his experiments, but Alexis disappeared again into Canada and could not be prevailed on to return even with the offer of a good salary.

Among the discoveries made by Beaumont were the length of time required for stomach digestion of different kinds of food and the conditions that affect digestion. Among other important facts he determined "that digestion is facilitated by minuteness of division and tenderness of fibre and retarded by the opposite," and that the taking of an excess of quantity "if persevered in, generally produces not only functional aberration but diseases of the coats of the stomach."

I have mentioned some of the giants in the Land of Physiology in the earlier days of that science. They had a larger field in which to delve, but they worked with coarser tools than do their successors of the twentieth century. There are just as able men and women now scattered through the hundreds of laboratories of the present scientific world as there were then, and every year brings a considerable, even if not always spectacular, yield to their patient and painstaking efforts.

IT'S AUGUST—
and there's relief in sight—

To paraphrase a leading HYGEIA article for that month:

"It's Ice Cream—and There's Sauce for It"—and also recipes that are intriguingly simple and simply intriguing. With *Miss E. M. Geraghty's* new ideas there's not only relief but delight in sight for all ice cream enthusiasts and hot weather sufferers.

Health resorts are havens of relief to many sufferers—but only if they are chosen wisely and well. *Anne Breckinridge's* words to the wise should be sufficient to tell them what to seek and what to avoid in selecting the right resort.

There's relief in sight for the arthritic patient if he will heed the advice which *Dr. M. H. Dawson* gives in answer to the question, "What can be done for arthritis?"

"Tailor-made weather" is *S. R. Winters'* designation for the comforts of air conditioning. Its past and present and the vivid possibilities for its future in various fields are interestingly portrayed.

And there's relief in sight from the terrorism of the mad dog, if *Dr. Fred O. Tonney's* words of warning reach their mark. With a story on "Rabies" he begins a series of chats between an old-time doctor and his little son.

What is acidosis? The layman misjudges it, for the ads misinterpret it. So *James A. Tobey* clears it all up, exposes the fallacies and gives reassuring advice.

The Tyranny of Nerves

THERE CAN be no opposition to the statement that a healthy nervous system is more to be desired than riches, for our bodily health and all that we attain are entirely dependent on its smooth functioning. The normal changes which go on in the body from birth to death make their special demands on this system as on all other tissues. At midstream in a woman's life when profound physiologic changes are taking place coincidentally with her efforts to carry on the routine of existence, there is a particularly heavy drain on the nerves. This is reflected by periods of exhaustion, of gloom, of snapping over trifles, of doubt, discouragement and despair. This marks the time when the words of an old hymn are brought to mind, "Art thou weary, art thou languid, art thou sore distrest." Every day, doctors see women who have reached this impasse and are obsessed with fears that they will never feel well again.

Today in a large sense the world has the "jitters," and we see people even in high places cracking under the strain of life's demands. But on the other hand we can remind ourselves in moments of deep discouragement when it seems as though fate had singled us out for hard luck that the people we admire the most are not those who have never had any problems; the most cheerful are not those who have never had any disappointments or sorrows, nor are the most successful without their failures. There are few indeed who at some time or another have not been bowled over by the many vicissitudes which life presents.

There is no more dangerous state in which to indulge than that of self pity, for it means a loss of grip, a surrender, an admission that one has become obsessed by one's own confession of weakness and has come to cherish one's incapacities and to embrace an invalidism which shuts out all responsibilities. This is an unconscious reaction which has taken place gradually, and the only possible cure for it is the realization that self pity is at the bottom of this lack of courage to fight ordinary battles as they come.

When we reach middle life most of us are appalled at the appearance of the real balance sheet of life as compared with what we expected it to be. We may rightfully feel disappointed, but we are obliged to accept the fact that dreams of riches, fame, popularity, even a large circle of friends are realized only by the few and that for most of us concentration on what appear to be the little things of life is our only opportunity for self expression and for points of contact with our fellows.

An answer to those who are caught in the web of their own imaginings lies in an analysis of self which is sometimes of the greatest assistance in breaking free from the tyranny of nerves and continued states of depression. It is not necessary to go to a psychoanalyst in order to find out the truth, for a little personal honesty will give leading information. One might ask oneself such questions as the following: Were you ever of a happy disposition even as a child? If things went wrong did you droop and go away by yourself? Have you always had a chip on your shoulder or perhaps a suspicion of people's motives? Have you been inclined to keep too much to yourself?

Such self questioning is of value because it indicates lifelong trends. This frank disclosure of one's weaknesses is entirely different from morbid introspection because it represents an honest effort to extricate oneself; whereas introspection is merely the acceptance of one's lot without hope or even desire of finding a way out.

There are innumerable women who feel only half well and spend enormous amounts of time

and a not inconsiderable amount of money trying to find some treatment which will bring back that zest for living which is characteristic of good health. And so they wend their way from one doctor to another, finally ending up with the charlatans who promise everything. We all regard, and justly so, physical health as a priceless gift. But it is a common experience to see many of our fellow men and women go uncomplainingly and cheerfully through life in spite of marked physical handicaps. Their nervous systems have not broken under the strain; indeed many occupy high places on the roster of fame. Such examples as John Milton, who was blind; Elizabeth Barrett Browning, who was of the frailest physique; Robert Louis Stevenson, a consumptive; Edward Livingston Trudeau, who brought life and hope to thousands though he himself was an invalid for nearly half a century, and thousands of others prove to us that the biggest thing in the world is not physical well being but mental courage to turn adversity to our advantage.

If we give nature half a chance she is always compensatory. If one thing fails there is always an overabundance in another quarter. The weakness of one part can be overshadowed and almost forgotten by the activity of other structures. If we are handicapped physically, there is no need of moments wasted in repining, for adjustments to a new order of living are not difficult once the mind is made up. That, however, is the whole trouble. Our physical body has so transcended everything else in importance that the resources of our minds are hardly known to us. Edison once remarked when microphones brought him a degree of hearing that he had never before realized how confusing sound actually was. Persons who have lost their eyesight tell us that their perceptions of the world about them indicate the development of a sense hitherto unknown. Most of us use only a portion of our faculties and have small conception of the degree to which we could overcome handicaps. No one believes that there is anything to be gained by becoming a martyr to suffering or pain of any kind, and one should not "take it lying down" if anything can be done about it. But there is nothing so fatiguing or so pathetic to the onlooker as one who hugs her grief for the attention it brings her.

THERE are few cases in which a depleted nervous system cannot be improved by a more careful adjustment between the individual and her environment. After all it is only a question of the human instrument being out of tune, making our troubles loom like a Gibraltar before us. If a careful physical examination shows that there is no anatomic maladjustment responsible for the nervous state, the pathway to recovery becomes fairly clear. There is no point in giving the time honored prescriptions of diet, rest and exercise without finding out just how much effort the patient has made for herself along these lines. Presumably prescriptions of tonics and sedatives have been faithfully taken, but equally presumably there has been little or no change in the manner of living. For instance, how many take a daily rest period? This is extremely important to the housewife as well as to the woman in business and should be taken irrespective of whether it seems necessary, for relaxation and quiet are the greatest restoratives for tired nerves.

THERE is no doubt that many of the digestive complaints which accompany nervous conditions are due in large part to retarded digestion from fatigue. What about regularity of eating and proper choice of foods? Faulty habits in these respects are common, and little regard is paid to choosing foods which will build up nerve force by improving the general nutrition. While there is no specific nerve food a balanced ration containing milk, fruit, eggs, green leafy vegetables and meat will supply the normal bodily requirements. It is a fact not sufficiently appreciated that many depleted nervous states are entirely due to the lack of the protective substances found particularly in milk and green leafy vegetables. As to outdoor exercise the recommendation of fresh air is more than a figure of speech for there is more oxygen in the outside moving air than indoors, and oxygen is necessary for the growth activity and preservation of every cell structure. Therefore the deeper and more rapidly we breathe the more completely refreshed we are. Whether in the office or at home an hour of outdoor walking should be made an essential feature of each day. During the winter, one's energies always flag, and unless a special time is set apart for this activity, there will be no regularity about it, and it will fall the way of most good resolutions. I do not wish to give the impression that the days should be spent in contemplation of ways and means to improve health, for along that road of introspection lies defeat. Outside occupation from ordinary routine is necessary; intellectual diversion should be sought, and new interests must be found. I know of no more infallible recipe for healthful and happy living than to be so busy that there is little time to think whether or not one feels well and no time at all to worry about oneself. Judicious measures to improve physical health will provoke a beneficial reaction in the nervous system. But since nerves are largely a state of mind, the real cure must come from resources deep down within the individual herself, resources which we all have—courage and resolution.

By EOLINE CHURCH DUBOIS

HEADACHE

When nature's stoplight signals, be sure to heed its warning, says

IRVING J. SANDS

HEADACHES are the most common of all human afflictions. I doubt whether there is any person living who at some time or another has not suffered from a headache. Its very prevalence makes a headache a rather dangerous condition because it is so apt to be neglected.

In one sense, the human system is a machine. Like any other machine it consists of a skeleton, an energy creating mechanism, an energy dispersing mechanism, a waste disposal mechanism and a coordinating and integrating mechanism. The skeleton of the human system is its bony structure. It gives to the human being his general contour and bodily form. The energy creating mechanism consists of the gastro-intestinal tract, the lungs and the glands of internal secretion. The energy dispersing mechanism is the heart and the blood vessels. The waste disposal mechanism comprises the kidneys, bladder, intestines, skin and lungs. The central coordinating and integrating mechanism, on which the uniformity of the activities of the rest of the organs of the body depends, is the nervous system. Because of the fact that most of the organs in the body contain parts of the nervous system, disease of any part of the body is reflected in the disturbance of some function of the nervous system.

HEADACHE in itself is the result of irritation of the brain. Therefore a headache may be nothing more than an expression of disease anywhere in the body. The human being differs from any other machine in that he has a mind, which may be defined as the brain in action, or preferably, as the expression of human behavior. Every act of a human being is accompanied by a pleasurable or an unpleasurable feeling, which results in a more or less prolonged state of pleasurable or unpleasurable tension, which we may call the mood of the individual. A human being in his daily activities expresses his inner hopes, desires and aspirations. These activities demand a good deal of both nervous and glandular activity, resulting in chemical and physiologic changes on the part of the brain and other organs in the body. Headaches often come from worry and from disappointment; therefore the human being may suffer from headaches not only because of disturbance in the function of his general machinery but also because of his mental activities.

A headache is not a disease in itself. It is only a sign and a symptom of a disease somewhere in the body. It may denote something insignificant, or it may be indicative of a most serious illness. For this reason, doctors regard the headache as a serious manifestation of a disturbance in a human being. It is a warning on the part of the body, which says to its owner, "There is something wrong with me; go to a doctor, and find out what it is."

WHEN a patient comes to him seeking relief from a headache, the doctor examines the patient thoroughly with the hope of finding the part of the body that is diseased, so he may treat the patient scientifically and effectively. The skeletal system may be affected, and a disease of the bones of the skull may cause severe headaches. Eyestrain not infrequently is responsible for intractable headache. Disease of the blood and infectious diseases are not infrequently ushered in with severe headaches. Kidney trouble may first express itself with a headache. Severe constipation may produce a chronic headache. Disease of the heart and particularly of the blood vessels, especially those of the brain, may cause chronic, intractable headaches. Diseases of the glands of internal secretion, particularly of the pituitary gland which is lodged within the skull, are frequently expressed in headaches. Tumors or inflammation of the brain are always accompanied by headaches. Inflammation of the lining of the brain, or meningitis, causes excruciating headache. Occasionally chronic poisoning, such as results from excessive smoking, may produce a severe intractable headache.

IT IS a known fact that the earlier a disease is recognized the more effective will be its cure. Therefore a headache should not be neglected. Whenever headaches are accompanied by nausea and vomiting it is a sign of a severe disturbance in the human machine.

Occasionally, a delay has meant the sacrifice of a human life, as in the case of a man who had been suffering from headaches for a period of six months and had been taking certain

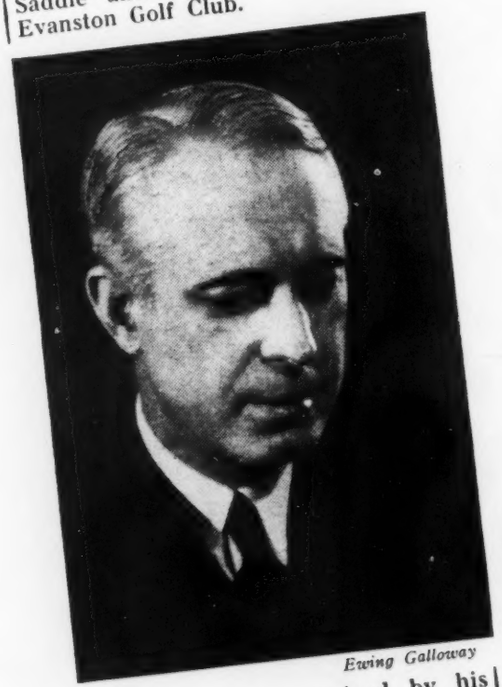
so-called "headache cures." Examination revealed obvious signs of a brain tumor, which could have been effectively treated at the onset of the headaches. Delay permitted the tumor to grow to such size that successful operation was impossible.

It is indeed unfortunate that headaches are regarded so lightly by so many people. It is indeed a pathetic situation that so many proprietary medicines are advertised in the press or on the radio as a sure cure for headaches. It must always be remembered that a headache is not a disease in itself but a sign of physical disease or of a disturbance in the emotional life of the individual. Medical help should be sought whenever one suffers from it; and the sooner it is sought, the earlier can treatment be instituted and relief be afforded.

ATTACK OF ACUTE INDIGESTION IS FATAL TO LAWYER

G. Freeman Weeks II, prominent Chicago attorney and senior member of the law firm of Weeks, Kittredge, Fulton and Fox, died late last night of acute indigestion at the age of 48 at his home at 1408 Lake Shore Drive. The funeral will be held at 10 a. m. tomorrow from the chapel of St. Chrysostom's Church, 1424 N. Dearborn Parkway.

Mr. Weeks was a member of one of the city's oldest and most prominent families, and he had taken active and responsible parts in numerous organizations and charitable drives. He belonged to the Chicago Athletic Association; the Exmoor Country Club; the Interfraternity Club; the Union League Club; the Chicago Yacht Club, the Saddle and Cycle Club and the Evanston Golf Club.



Ewing Galloway

Mr. Weeks is survived by his widow, Mrs. Jane Kelton Weeks, two sons, G. Freeman III, and Kelton M., a daughter, Frances, and a brother, Walter A., of Lake Forest.

DEATH NOTICES

ARMSTRONG—Andrew A., 51, 1429 N. Kildare Ave. Gallstone colic. Beloved husand of Ethel G., nee Harding; fond father of Edna L., Marianna W., Frank P.; brother of Beatrice Jordan a Joseph K. Services at the Jones Ho Naperville, Ill., June 1 at 2 p. m. terment at Lakeside Cemetery.

BAKER—Benjamin P
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CORONARY

AN IMPORTANT form of heart disease which is definitely on the increase is coronary artery occlusion. Fifteen years ago it was thought by the profession that this form of heart disease could not be diagnosed with certainty during life and that it was invariably fatal in its outcome. Today it is known that this form of heart disease can be diagnosed during life and that it is compatible in a great proportion of cases with many years of comfortable and even fairly active although restricted life if recognized during the first attack and properly treated.

Why is this form of heart disease on the increase? First of all, many cases that would go unrecognized or under a different but faulty diagnosis are now recognized by the physician. Secondly, although about twenty years ago the average span of life was forty-eight years, today it is sixty, and in about 1944 it is expected to be around sixty-five years. This remarkable progress in the prolongation of human life is definitely due to improvement in the care, treatment and prevention of sickness in infancy and childhood. Not nearly so much was accomplished with the diseases of the middle and latter half of life. A greater number of persons reach middle life, therefore, and some of them reach middle life in spite of poor health during infancy and childhood. Hence an increase is noted in the number of cases of cancer and of coronary heart disease, both diseases of middle age and the latter half of life. Coronary heart disease is the result of wear and tear on the blood vessels in general and on those of the walls of the heart in particular. Another cause is the fact that greatest responsibility comes to us with middle age and with it all the accompanying stress and strain. Lastly, the depression and perhaps the great war from which humanity emerged nineteen years ago had a great deal to do with the increased frequency of this serious form of heart disease.

THE heart is a hollow muscular organ, the walls of which measure from one-eighth to three-fifths inch in thickness. These walls, as any other tissue, are nourished by blood vessels which spring from the root of the aorta. These blood vessels are known as the right and left coronary arteries and their branches. If any of these two arteries or their branches are blocked, then a greater or lesser area of the wall of the heart, depending on the size of the occluded artery, instead of having the healthy consistency of normal muscle becomes soft and mushy, so that the heart cannot function prop-

HEART DISEASE

By BERNARD S. KLEINMAN

erly. The great immediate danger is that if this accident is not recognized and proper treatment is not instituted, the heart may rupture at this weak point, and instantaneous death will result. The danger of such an outcome is certainly great, not only during the first few days but for several weeks.

In a series of 145 such cases which were collected at the Peter Bent Brigham Hospital in Boston, it has been shown that in many of these the patients had been suffering from diabetes or abnormally high blood pressure. It stands to reason that these two conditions should lead to coronary occlusion, because the lining of the blood vessels in diabetes and hypertension becomes hardened, calcified and brittle in patches. If a particle of such a brittle patch becomes detached, this particle is carried in the blood stream until it reaches such a point that it cannot proceed any farther and at this point occludes or blocks the circulation of blood.

THE same series of cases has shown that coronary occlusion occurs rather frequently in individuals who are athletically built and perhaps a little overweight. Some of them were even athletically inclined and engaged in sports. Still many others have given a history of having had attacks of angina pectoris; that is, pain in the region of the heart lasting anywhere from one to twenty or thirty minutes on exertion or excitement.

The pain of coronary occlusion is simliar to the pain of angina pectoris but is much more excruciating in character and lasts for hours, days or even weeks. While the pain of angina pectoris is brought on by excitement or exertion, such as walking against the wind or consuming a heavy meal, the pain of coronary occlusion may occur when the patient is at rest or even asleep. The pain of angina pectoris yields readily to medication. The pain of coronary occlusion does not yield so readily. In both cases the pain may radiate from the heart region into the arms, particularly the left, then to the back of the chest and neck, and to the jaw. The attack of coronary occlusion is accompanied by a lowering of the blood pressure and severe prostration, the patient being cold, clammy and ashen gray and often bathing in his own perspiration. Almost all have a sensation of impending death. Within twenty-four hours a low grade temperature, from 100 to 101 F., develops.

Fortunately the great majority give such a picture as just described, so that the diagnosis is fairly easy. In a small but nevertheless significant percentage of cases, however, the history and symptoms are not so clearcut. First of all, in almost all the cases of coronary occlusion, gastric disturbances, nausea or vomiting are present, and the unfortunate patient often claims that a stale biscuit at breakfast or some food consumed the night before is the cause of the upset stomach. The pain usually is abdominal in location, and if the patient has been suffering in the past from gallstone colic or some stomach ailment such as peptic ulcer it is indeed a hard matter not only for the patient but also for an experienced physician to arrive at a true diagnosis. Many cases of coronary occlusion parade under the name of acute indigestion. It is not unusual to read in the daily papers that some well known person has died of acute indigestion. One of our ex-presidents several years ago was reported by newspapers to have succumbed to such an attack of acute indigestion.

There are also a few rare instances of coronary occlusion in which there is no pain at all. The patient is simply prostrated and has difficulty in breathing. In all these doubtful cases the physician must seek aid from the laboratory, and the patient may be asked to have an electrocardiographic examination. The electrocardiograph is a machine which records the electrical changes in the heart muscle. In coronary occlusion certain changes take place. Unfortunately these changes are not always detected by electrocardiograph.

IN CONCLUSION the following points must be emphasized:

1. Coronary occlusion is caused by the wear and tear on the blood vessels that nourish the heart walls.
2. Diabetic persons and those suffering from abnormally high blood pressure are somewhat predisposed to this disease.
3. It occurs in middle age and during the latter half of life.
4. Coronary occlusion is easily diagnosed from the history, symptoms and physical observations.
5. Many cases are atypical and present difficulties in diagnosis, particularly those simulating acute indigestion.
6. An electrocardiographic examination is necessary for recognition of these doubtful cases.
7. Coronary occlusion is a grave but not a hopeless disease, if the condition is promptly recognized and proper treatment is at once instituted.

Snakebite

A Story of Serpents in Eden

by

MARIE SEACORD LILLY
in collaboration with
DUDLEY JACKSON

ARE YOU taking the family on a camping trip this summer? With the coming of July does a wide ribbon of concrete give you the urge to pack up the old trailer and make for the wide open spaces? Then this story is for you. It is not a pretty tale, but it is true.

The Mason family was reared in a city flat of five rooms not far from the roar of the elevated. They were alert to the dangers of city life to which they were accustomed, but their knowledge of the country was derived only from the short annual vacations which Father Mason was granted by his company. Its perils were an unsuspected menace. A normal healthy American family, they loved the outdoors and looked forward to these outings from one year to the next. Last year they had planned and saved for months for a trek to Colorado in the family car.

Finally came the long awaited day when the second-hand trailer was loaded with cots, provisions and the latest gadgets in camping equipment. Rising with the dawn, they threaded their way through market trucks to the open country. At nightfall, tired and hungry as young puppies but with hilarity still undimmed, they pitched camp on a lofty sandstone cliff overlooking a winding river. The plateau behind them sloped back to a green wood. Everything was idyllic, perfect beyond their most extravagant dreams.

The night was hot, and the folding cots were stretched outside the small tent where the breeze was fresh. They were lulled to sleep by the whisper of the trees and the gentle chortle of the river far below. Then came the terrible awakening. Suddenly, awful screams tore them from their beds and slumber.

Baby Alice, aged 3, was frantic with pain, and she could not tell them what had hurt her. By the time the new gasoline torch was induced to burn, one fat little arm was swollen to twice its normal size. The baby flesh was purple to her shoulder and splotched with gangrenous green before their examination revealed two dark marks like punctures on her hand. They knew then a snake had struck her. Her hand must have hung from her cot and disturbed the reptile in his nocturnal prowling. When they lighted a fire and began to break camp they found a vindictive rattlesnake coiled around one of the tent stakes.

A precious hour had been lost. Another was consumed in reaching the nearest town and routing out a doctor in the dead of night. For ten dreadful days they feared every breath would be the baby's last. By the mercy of God and the ministrations of a country doctor who knew his snakes she did not die. She lay for days in the inadequate hospital of a strange little town. When they finally took her home the flesh was wasted from the tiny fingers, and her right hand was hopelessly deformed and useless. The family income was pledged to the country doctor and the hospital to an extent which will render vacations an impossibility for the next three years at least. And all this need not have happened.

During those days of agonized waiting, Mother Mason said again and again, "If we had only known!" Her remark contains the essence of the whole problem. If the Mason family had known that poisonous snakes, whose bite may be fatal, range in every state in the Union except Maine, New Hampshire and Vermont, they would have gone prepared. If they had known simple first aid remedies, which every child in a snake country is taught in his cradle, the baby hand would have been saved, and life would be a different proposition for them all today in the city flat.

The danger from snakebite is greater in America today than ever before in civilized times. This is due to the increased interest in outdoor life and the far flung network of highways which has opened up territory practically untraveled until recent years. Dr. Raymond Ditmars, curator of reptiles in the New York Zoological Gardens, states that more than 2,000 cases of bites by poisonous reptiles were reported last vacation season. Dr. Ditmars further states that because of the nature of the problem the vast majority of cases are never officially reported. Out of the 2,000 reported cases, 300 resulted in death. And that need not have happened either.

Camping, hunting, fishing, work on the railroads and in the quarries, all can be carried on in safety. The point to it all is to know that there is danger and to be ready when it

IF THE SNAKEBITE OCCURS ON THE ARM OR LEG APPLY THE TOURNIQUET BETWEEN THE BITE AND THE BODY. TWIST IT TIGHTLY ENOUGH TO MASH THE TISSUES AGAINST THE BONE BUT NOT ENOUGH TO STOP THE CIRCULATION ENTIRELY.

strikes. It is simply the old question of preparedness.

There are four types of poisonous snakes in the United States: the rattlesnake, the copperhead, the cotton mouth moccasin and the coral snake. The bite from any of these may be fatal. The first three mentioned belong to the pit vipers and have the common characteristics of strong, thick bodies, small necks and flat triangular heads. The fourth, the coral snake, is a slim handsome dandy belonging to the deadly cobra family of India.

The most widely distributed and most deadly is the rattlesnake, of which there are many species. His challenge to your approach identifies him immediately, for the whole motley crew is distinguished by rattles on the end of the tail. He is a vicious fighter, seldom taking refuge in flight, and he secretes more venom than any of the other poisonous reptiles. The rattler of average size injects eight or nine times enough venom to kill a man of average weight. He is a good sportsman though, for he seldom strikes without warning. You will not mistake his rattle; it has a nasty sound like a cross between the whir of a locust and the rattle of dry beans in a pod. Your backbone reacts instinctively.

In certain sections of the country there are many copperheads; through the eastern states two thirds of the recorded cases of snakebite are inflicted by this reptile. He is a lazy sluggard, seldom striking unless approached within six or eight inches. Being less venomous than the bellicose rattler, he is consequently less to be feared.

The cotton mouth moccasin of the South is not a fighter by choice either; he slithers through the mud at the approach of danger. As he is semiaquatic, spending most of his time in the swamps and bayous, his victims are usually hunters, fishermen and small boys in the old "swimmin' hole."

The coral snake also chooses the sunny South as his habitat, frequenting the Rio Grande country and ranging as far east and north as North Carolina. He is small, rarely exceeding 3 feet in length, with distinctive markings. From behind his eyes to the tip of his tail his slender body is completely encircled by bands of bright yellow, vermillion and black. It is difficult for him to strike a human being, for his fangs are short and the peculiar formation of his jaws makes it impossible for him to sink them into a large object. Danger from this snake is negligible.

The knowledge that there are venomous snakes about will avail little unless it inspires you to do something about it. The first requisite is to include a snakebite kit in your camping equipment. It is fully as necessary as your gun and far more likely to save you from actual physical danger. There are a number of scientifically prepared snakebite kits on the market which are excellent and inexpensive, but a homemade kit which will serve you just as well can easily be assembled.

Pack a small box with a bottle of tincture of iodine, a sterile razor blade, an elastic string strong enough to be used as a tourniquet, and a small suction pump. An ordinary breast pump is carried by many sportsmen in the snake countries. This box should be placed in a spot easily accessible and known to all your party. In case of snakebite there is no time to hunt for lost articles. Delay may mean the difference between life and death.

If you are going into snake country (and the odds are about 50 to 3 that you will!) it is a wise precaution to provide yourself with boots and heavy clothing. Even if the fangs of a snake should penetrate the leather of a boot, it is unusual for enough venom to follow through to cause serious trouble. When you have made these two simple preparations, forget about

scotching the snake until it is time to pitch camp.

At sunset when you have found the place of your dreams, select a spot that is free from brush and piles of rock which might harbor the enemy. If brush must be cut, burn it or remove it to a safe distance from the camp site. Bedding which has been hung over bushes or spread on the ground should be carefully examined before it is used. When picking berries or flowers, do a bit of prodding about with a stick. Look before you sit down on a rock or log. One young girl in Texas who neglected this precaution died within forty minutes after having been struck on the body by a rattler.

SHOULD you encounter a serpent in your chosen Eden, the chances are that he will be a harmless one; but this camp enemy number one seldom tarries to be identified. In case of snakebite, there is one safe rule and only one. Proceed to the nearest doctor as quickly as possible. This rule is not without the proverbial catch, however, for snakebite is essentially a rural problem, occurring usually far from dwelling houses and the haunts of physicians. First aid must then be applied immediately, and often by the victim himself. It is therefore of the utmost importance that you understand the rules of procedure in advance.

In case of snakebite, do not run. Do not give alcoholic stimulants; whisky is no cure for snakebite. On the contrary, it stimulates the circulation and increases the distribution of the venom, which is exactly the thing to be avoided. Keep the patient as quiet and as calm as possible. If prostration or giddiness develops, coffee or strychnine may be safely given. Remember what must be done and why you are doing it. Bear in mind that the venom of our native snakes acts slowly. If first aid has been promptly and carefully administered and a physician is reached within twenty-four hours, the chances for the recovery of the victim are excellent. The shorter the time which has elapsed, the better for the patient.

Here then is the lesson you must learn, and it is as fundamental to the camper or hunter as were his ABC's. It is called the suction treatment. By the use of the suction treatment and the injection of an antisnakebite serum the fatality in San Antonio, Tex., and the surrounding territory has been reduced from 15 per cent of those stricken to 1 per cent.

AS HAS been previously stated most snakebite occurs on the arm or leg. If this is the case apply your tourniquet between the bite and the body. Twist it tightly enough to mash the tissues against the bone but not tightly enough to stop the circulation, as the venom travels through the system in the lymph, not in the blood stream. With the tourniquet in place, carefully disinfect the area where the fangs have entered. With the razor blade make cross cut incisions one-fourth inch deep and one-fourth inch in length over each puncture. Some of the venom will be released immediately with the flow of blood. When the cuts are bleeding freely, apply the suction pump to the wounds for an hour and a half or two hours and then at intervals of twenty minutes until you can secure the services of a physician. If no pump is available, suck the blood from the wounds. There is no scientific authority for the statement that abrasions in the mouth make this procedure dangerous.

Intense pain and swelling are symptoms of poisonous snakebite. As the swelling spreads from the incisions, make cross cuts again at the edge of the swelling and apply the suction to them, for the swelling marks the progress of the venom. A strong purgative such as epsom salts may be given as it aids the system in throwing off the poison.

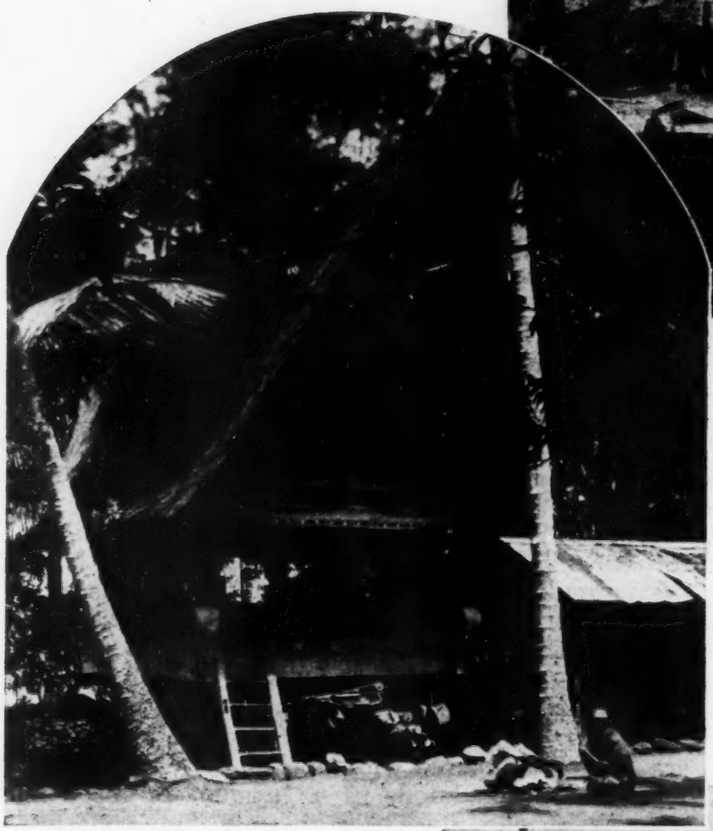
If the bite occurs on the body, the danger is more grave and the utmost haste in reaching a doctor is imperative. The tourniquet is useless in a case of this kind, but the incisions and the suction are important. They must be continued until a physician is reached. The doctor may inject an antisnakebite serum to combat the venom.

THIS serum is prepared from the blood of healthy young horses which have been highly immunized against the venom of the most poisonous North American snakes by repeated and increased dosage of venom. The serum is a commercial product for sale at drug stores in snake infested countries. Full instructions are inclosed with the packet, and the serum may be administered without the aid of a physician; but in the hands of a layman its success is problematical. There are qualifying conditions affecting its successful use, such as the amount of venom that has been injected, the temperature at which the serum has been kept and the duration of time that has elapsed since the bite.

If you observe these simple precautions, have a light within reach and your snake kit handy, you can crawl into your blankets carefree. You will be in no more serious danger than when in your bed at home. When you hear the hoot owl sound taps in the old pine tree above your head, go to sleep in peace.

Snake stories are always intriguing, even though not pleasant. The oldest and the best is told in Genesis. Most of us have a natural aversion to snakes, which is not unfounded. Enmity between the seed of woman and the serpent is by divine decree. We may as well face the issue squarely. The story of the Mason family need have no counterpart. The campaign against the snake is as old as time itself, and preparedness is the slogan of victory.

THUS THE FISHER FOLK HAVE ADAPTED THEIR VILLAGE TO THE STEEP SLOPE OF THE HILL BY BUILDING THEIR HOMES IN CLIFF DWELLER FASHION. THIS IS AT SKALA, ON SANTORINI ISLAND OF THE CYCLADES GROUP, WHICH BELONGS TO GREECE.



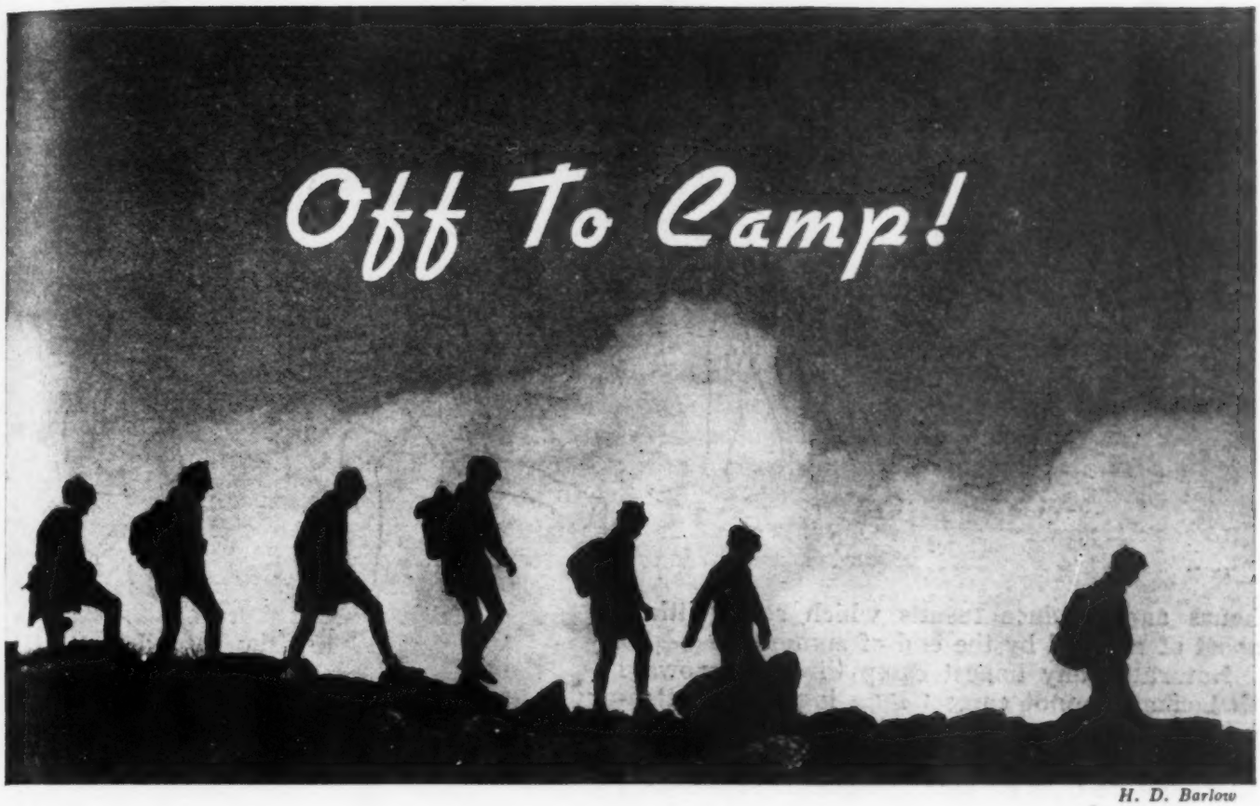
Ewing Galloway Photos

That each should in his house abide,
Therefore was the world so wide.

—EMERSON

THIS SELF VENTILATING HOUSE WAS BUILT FOR COMFORT DURING HOT WEATHER IN SUMATRA. THE LOWER FLOOR SERVES AS A LIVING ROOM AND IN EXTREMELY HOT TIMES AS A BEDROOM; ABOVE THIS IS THE BEDROOM AND DRESSING SPACE. THESE BATAK VILLAGERS BELIEVE IF THEY SLEEP OUTDOORS, DEMONS WILL GET THEM.

THESE SINGAPORE FISHER FOLK HAVE DEVISED AN EFFECTIVE METHOD FOR KEEPING THEIR HOMES FREE FROM THE BURDENING LAND TAX—THEY HAVE BUILT THEIR HOUSES OVER THE WATER.



H. D. Barlow

WHEN SCHOOL CLOSES and vacation begins, when your child has been fitted to shorts and blouses, when his trunk is packed and you've seen him file away among the milling thousands of other youngsters under the blue vault of Grand Central Station, entraining for his camp, do you heave a sigh of relief and thank heaven that is over? Of course you do, and who has a better right?

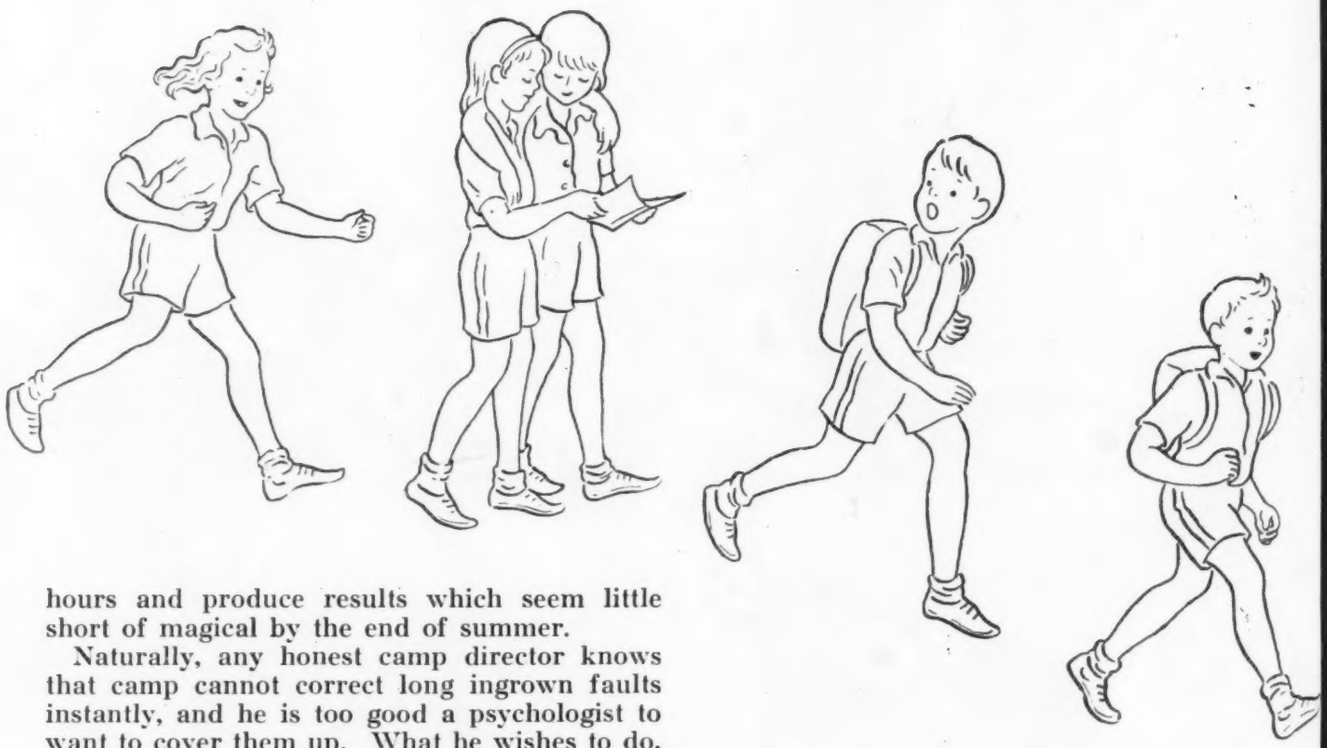
But later on, say about 4 a. m., do you begin to worry and wonder whether you have done everything you ought to have done? It is just possible that you really have done everything; you may be the one perfect parent in a million.

But stop a minute and think. What did you write in that space reserved for remarks about your child after you'd written down mumps, measles, whooping cough? You wrote something rather like this, I'll wager: "John is a good boy, rather high strung, quick at lessons, nervous, a fussy eater. Takes after his father. Please get him to stand straighter, be a better sport, mind more promptly." Or, "Donald is a good child. Rather slow and timid, a little behind his age in school work, lethargic, a picky eater. Is afraid of the dark and the water. Cries like a girl when scolded. Is very disorderly."

What you've written is good as far as it goes, but it doesn't go nearly far enough. The camp director wants a picture not only of your child's actual faults, but why he has them, what has been done about them and what the results of these various methods of correction have been. What he'd really like best is a letter from you and a letter from your husband as well—letters written honestly and clearly from your own point of view, detailing the problems you have had with your child. To be quite perfect, the letters should be seen by no one but the writer and the recipient. If you write your letter so that your husband can read it and not want to slay you instantly, it isn't the truth! If your husband writes a letter which will please you, it certainly won't help the camp director understand your child.

In addition, if you know your boy's school teacher well enough, ask her to write a note to the camp director too. Not being blinded by maternal affection or paternal ambition, she sees your child very much as he really is, and she is usually able to offer several pointed and helpful suggestions. Assuming that you three have written and posted these three letters, each letter giving a true picture of conditions as each sees them, you can be sure that you have done practically everything humanly possible to orient your child and his problems in the director's eyes. Now he has a clear picture of both parents and of your relations to your child and to each other. He even knows what the child's teacher thinks of him and of you and the whole situation. Knowing these things he can bring remedial measures to bear within twenty-four

By REGINA J. WOODY



hours and produce results which seem little short of magical by the end of summer.

Naturally, any honest camp director knows that camp cannot correct long ingrown faults instantly, and he is too good a psychologist to want to cover them up. What he wishes to do, and what he does do when he can, is to substitute good habits for bad ones and provide, through a different environment, scientific knowledge and friendly counselors, a whole new behavior pattern. The seeming miracles a summer at camp often produces are merely a combination of new interests, new skills and genuine sympathetic understanding.

If your child has any unusually bad habits, describe them in detail so that the camp director may get advice from a mental hygienist or neurologist, for it is by scientific means that camps influence their charges. Nowadays, military discipline and punishment are unknown. Counselors who are teachers in the winter months often pool their knowledge of young folks to excellent purpose. But more and more the trained psychiatrist is in charge of the child's mental health in a good camp. In the short space of two months tremendous transformations can and do take place. The child who was nervous and underweight may become reasonably calm and may actually put on ten pounds. A poor sport, slow and timid, may become a regular fellow, one of the gang who'll try anything once! Disorderly youngsters learn neatness, and the dawdler is trained to punctuality. Indeed, most problem children, no matter how noisy or undisciplined, quickly resign themselves to behaving in a perfectly normal fashion after a month or two at camp.

The physical examination should not be rushed through or evaded, for it is an excellent preliminary to a summer of activity and health. It determines what athletics a child may indulge in safely, and it may even locate heart disorders, weak lungs or beginning hernia before the condition becomes serious. This examination is also a real safeguard, for it detects cases of contagious disease and thus prevents the whole camp from coming down with mumps or whooping cough. You need not fear disease or accident at camp. Indeed your child will be exposed to much less illness or danger than he would if he remained home playing about in his own neighborhood without skilled supervision.

Before you choose a camp, give careful consideration to the location, the personnel, the equipment and the price. Make use of the camp information bureau of a good magazine, and be satisfied only when you are sure you have made searching inquiry. Nothing is more disturbing than to find that snap judgment has caused a considerable outlay of money for a camp which is in no way suited to your child's personality or his talents. Don't ever send your boy to a camp because it is fashionable and you are sure the right people patronize it. There are all sorts of camps from which to choose—from camps for the nursery school toddler where trained nurses are in charge, to college camps in language and engineering. There are camps for the physically handicapped child and for the mentally handicapped too. There are camps by the sea and in the mountains and out on the sandy deserts. There are special camps for music, for drawing and for dramatics. There are camps which feature horseback riding, mountain climbing and water sports. There are

camps to suit every child's individual needs and every parent's purse, for camp fees vary from $10 a week at the organization camps to $50 a week with riding not included. One and all they are valuable; but don't let their variety be your undoing. Keep your child, his health, his mental behavior and his pleasure always in mind as well as the place and the price. If possible meet the director and have him meet your boy.

Camp athletics are becoming less and less competitive. Medals for form, for speed and for excellence are still given; but the weak are no longer pitted against the strong. The "die for old Eli" spirit is gone. "Our boys overcome their weaker selves, not their weaker comrades," said one wise camp director and, so saying, gave

utterance to a thought held by many to be a motto well worth having engraved in every gymnasium in the country.

Almost every child from 8 to 15 can spend half a dozen summers at camp relaxing mind and body from the grind of winter study, learning new skills and forming new habits of appreciation. Camp will almost inevitably develop a spirit of self reliance, resourcefulness and courage, and children who formerly did not know the meaning of the word "cooperate" soon become good citizens in this group environment.

As most children are natural egotists, camp helps them one and all, for there is no maternal yearning solicitude for any one. Counselors are people, not substitute fathers or mothers. In camp, one learns by doing and by following the example of one's peers. The spoiled child, away from his mother's humble adoration, must snap out of his grouch and behave like a human being if he is to be liked and have a good time. For the diffident child this impersonal attitude is ideal, for he must make some advances himself. As for the studious, retiring youngster whose parents have forgotten how to play, camp is the nearest perfect place on earth, for all the counselors are able, mature playmates.

Don't worry about homesickness if your child is between 7 and 12; but if by chance your 13 year old is going away for the first time, you'd better watch out; that is, if statistics prove anything. If possible arrange a series of short visits for every child who is going away to camp for the first time. Perhaps you can have him visit for a night or two in the homes of his neighborhood chums. Perhaps relatives will take him on for a week-end visit. One thing you can be sure of is that once he has spent half a dozen nights away from home, camp will be just another place to go to, and you will be spared agonizing letters of pleading which demand that he be permitted to return, for change is seldom fearsome to a child if he is

accustomed to change and the adjustments it entails. If, after all, homesickness does come on your child suddenly and you are heartbroken by his letters, do not dash after him, driving madly all night. Rather, phone the director to get in personal touch with the child and then to let you know whether he should come home. Only one youngster in a thousand really wants to come home. What he wants is to be the center of the stage again and get a little personal attention. Usually all that is needed to settle him down for the summer is a lot of activity and a few words of comfort from the head of the camp. Indeed, in many a child's life the friendly personal interest of his camp leader at this time will do more to give him the right slant on life than any other one thing that happens at camp.

Here are a few do's and don'ts for yourself, if you want to be a perfect parent from the camp director's point of view. Do be cheerful when you say good-by, appreciative when you're shown round camp and hopeful of all sorts of good things from the future. Don't send money, candy or sentimentally sobby letters, and don't telephone unless there is an emergency. Your letters can make or mar your child's summer. Write briefly, not too often and as simply as possible. Make light of trouble, and give much of the family and neighborhood news. Don't stress the wonderful times you are giving brother or sister unless you want a letter by return mail begging for permission to come home. Be sure to give bulletins of your child's pet, and confine your affectionate words to those of one syllable. If you do so, your letters will be received with joy and answered with enthusiasm, without ever being the cause of tear-stained pillows.

If you wish to take a chance on receiving more letters than camp requires be sent you, tuck a couple of dozen self addressed, stamped envelops into the trunk you pack, along with half a dozen pencils and a small pencil sharpener. This may or may not encourage your young hopeful. Don't be too sanguine about a letter a day, and remember that unless you pack the envelops quite near the top of the trunk he probably won't find them at all, and you'll unpack them yourself the first of September.

If you get complaints that the food isn't good put the complaint frankly on paper. Tell the director exactly the fault your child finds. If anything is really wrong, it will soon be fixed up. If it is just a question of the food not being prepared to the child's taste, you will find his complaints have ceased almost as soon as the matter is talked over, man to man, by your boy and the head.

Tutoring camps are becoming increasingly and justifiably popular, for they afford a superb way to supplement or make up work. This study is all done in congenial surroundings with able teachers, with athletics and active fun on the side to make it enjoyable. The child who has to tutor is exceedingly lucky if he is able to tutor at camp. Almost any regular camp will gladly arrange for a lesson or two a day if you will discuss the matter early in the season. Tutoring is charged for at regular hourly rates and usually works out greatly to the pupil's advantage, for a little individual attention goes a long way in teaching, particularly if the pupil is intelligent and wants to learn.

In addition to these regular camps, there are three new types of camp for older boys and girls. A certain institute of technology conducts a special camp lasting two weeks for boys who are hesitating between choosing an engineering school or an arts college. These two weeks are preferably taken the summer the boy has finished his junior year in high school. There are two lectures a day in which able men point out what their specialties have to offer. In addition, there are many elaborate psychologic tests which experience shows are uncanny in their accuracy. There are sports aplenty, swimming, hiking and sailing.

For many years, Harvard has maintained a summer engineering camp where field work in surveying can be done in pleasant country and wholesome surroundings. Swimming, tennis and long hikes are not neglected.

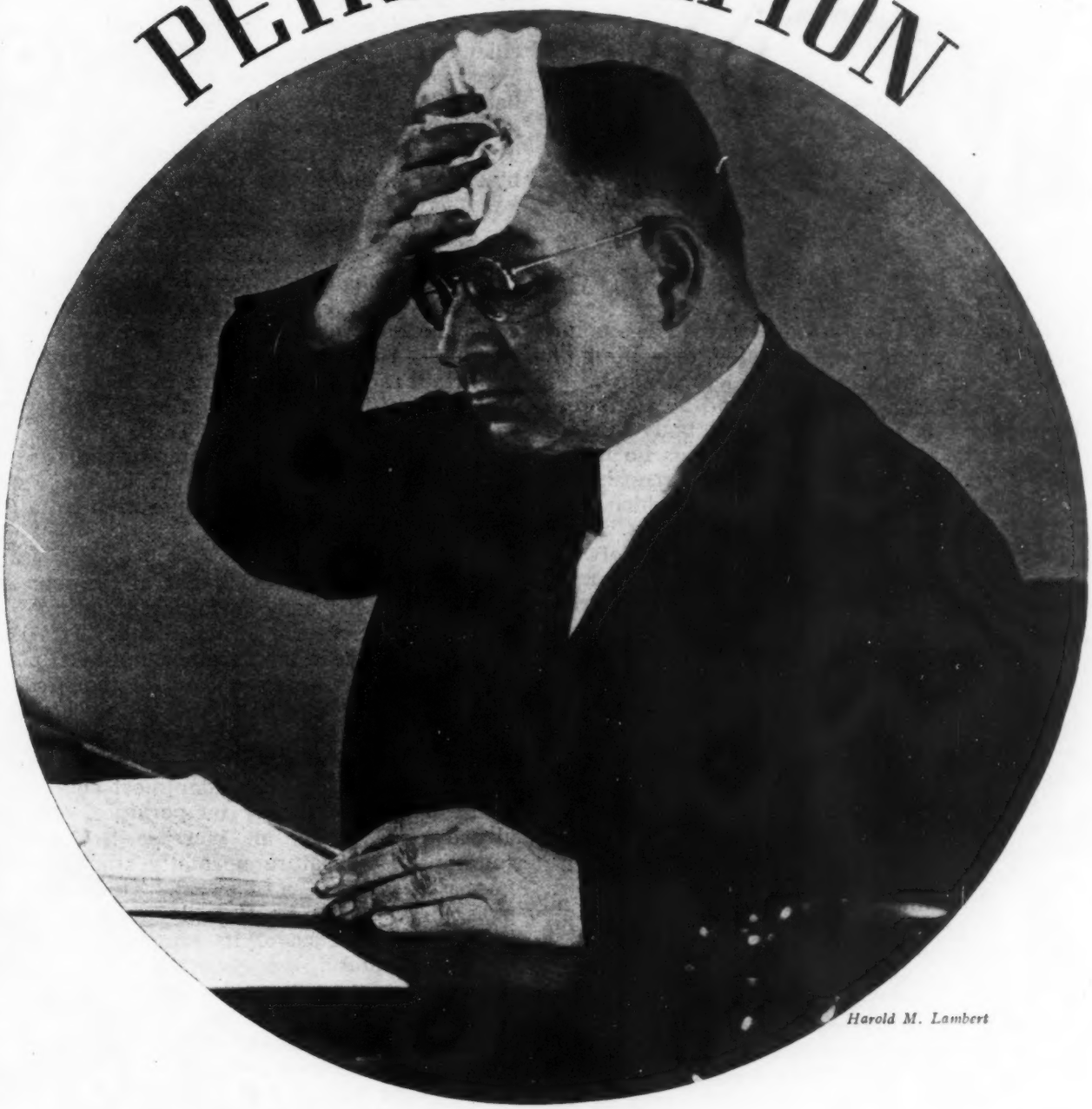
Most interesting of all these educational plans is the language camp proposed by President Conant of Harvard, along the general lines of the summer school of modern languages at Middlebury, Vt. Here the boys live with the instructors whose native tongues they are learning. All day and late into the night the language chosen must be spoken. Lectures, readings and dramatics are all in the foreign language; not a word of English is heard on the grounds. Two months of this intensive work represents a whole year of college French or German. More and more is this plan of the summer language camp coming to interest leading educators.

Almost all camps keep a separate chart for each child, detailing his activities, his successes and failures as well as his physical and mental health. Ask about this when you enter your child, for many camps only send written reports on request. Sometimes the director will call on you personally and sum up the good the summer has done your child. He may even have some good advice to give you on how to improve on what appears to be perfection! Often these interviews or letters in reference to certain difficult problems are worth the price of tuition, for they bring outside and unprejudiced points of view to bear on your child, not when he is on his best or worst behavior but right through weeks and weeks of regular living.

From choosing the right camp for your child to seeing that he retains some of its benefits is one of the most delightful pastimes in the world. A little careful study of camp literature, a few interesting talks, and then comes the pleasing business of outfitting your child for a summer of glorious adventure. What could be more delightful?

Remember, don't belittle a single item, either of discipline, location or equipment. To the child, getting ready for his summer at camp is just as exciting as getting ready for a trip to the South Pole with Byrd would be to you. Be enthusiastic, practical and interested, and rest assured that camp will send you back a well adjusted, healthy, happy child. If you do your part well, the camp will be able to do its part even better.

PERSPIRATION



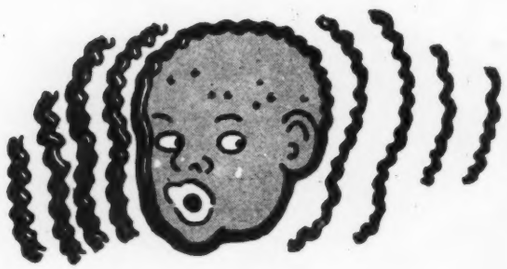
Harold M. Lambert

THE THERMOSTAT OF THE BODY

By JAMES O. NALL

PERSPIRATION is a basic factor of the normal physical life; that is, there is no human life without perspiration. The word has also been made the basis of many epigrams, among which is, "Genius is one per cent inspiration and ninety-nine per cent perspiration." That one has been attributed to Thomas A. Edison, and certainly the world has many things for which to be thankful that he achieved by "the sweat of the brow." Longfellow wrote: "One half of the world must sweat and groan that the other half may dream."

Sweat is chiefly water. In solution it also contains varying amounts of other constituents, such as inorganic salts, organic acids and urea. The chief inorganic constituent is sodium chloride, or common salt, which accounts for its normal salty taste. Sweat comes from the blood, and under average conditions the normal person produces approximately one quart of sweat



in the course of twenty-four hours. The amount produced may vary considerably, depending on exertion and the atmospheric temperature.

Sweat is taken from the blood by the sweat glands and is poured onto the body surface through the skin pores. The glands lie in the deep layer of the skin. Each gland consists of a minute coiled tube, one end of which runs to the skin surface and opens there as a skin pore. Each gland is surrounded by a network of blood vessels, giving free opportunity for the constituents of the sweat to be removed from the blood. The glands are distributed generously throughout the skin over the entire body but are more abundant in some areas than in others. They are most numerous in the palms of the hands and the soles of the feet, but these areas do not produce the most sweat because they are not stimulated to increased action by an increase in temperature. In general, other areas of the body do increase their sweat production when there is an increase in the surrounding temperature.

Normally, the sweat glands are active on all parts of the body surface all the time. If the perspiration is absorbed by the clothing or is evaporated as soon as it reaches the body surface, we are not conscious of it. Such perspiration is called insensible perspiration. When it appears in such amount that we are conscious of it, it is called sensible perspiration.

As a rule, the more exposed areas of the body produce the most sweat. The armpits and the areas between the upper thighs do not produce as much sweat as the more exposed areas, but it seems that they produce more because the skin areas are in contact there, and evaporation is limited because of lack of free exposure to the air.

Normal sweat helps to keep the skin moist, soft and pliable. It is aided in this by sebum, the natural oil produced by the sebaceous glands of the skin and constantly secreted on to the body surface. The sweat also serves a definite excretory purpose; the primary function of perspiration, however, is the heat regulation of the body.

The body temperature depends on a number of factors. Basically, the body heat is produced by the body metabolism; that is, the assimilation of food and the dissimilation of waste. Additional heat is produced by the utilization of food, chiefly carbohydrate, to supply energy for the exertions of activity, work and play. The body heat is regulated and the body temperature is normally maintained at approximately 98.6 F. by means of the vasomotor center in the medulla, by radiation and by the constant activity of the sweat glands. The vasomotor center regulates the size of the blood vessels in the skin and this regulation in turn controls the amount of blood coursing through these vessels and eliminating water as sweat. Normally, this eliminated water cools the body as it evaporates from the body surface. Thus, perspiration is an extremely important factor in regulating the body temperature, for without it the action of the vasomotor center would be frustrated. To be effective the controlling action of the vasomotor center must be aided by actual elimination of the water from the body and by its evaporation from the body surface.

The temperature of the sweat at the moment it appears at the body surface is slightly lower than the temperature of the blood. This is a natural decrease in temperature that takes place during the short time required for the sweat to traverse the sweat gland tube to the skin surface. As the sweat reaches the surface its temperature changes to that of the surrounding atmosphere which, under most conditions, is lower than the body temperature. As has already been said, an increase in the surrounding temperature normally stimulates an increased production of sweat. This is a compensatory response by the body and is necessary in the maintenance of its temperature at the average normal figure.

The free evaporation of sweat from the body surface depends on the humidity, the amount of water vapor in the surrounding air. The humidity may reach 100 per cent; that is, the surrounding air may be laden with all the water vapor it can hold. In that event there will not be any evaporation of the sweat, and the individual will not feel any relief from the heat no matter how freely he may perspire. Thus, the less the humidity the more rapidly the sweat will evaporate and the more relief one will receive from sweating. The humidity varies with the temperature, the air currents, the climate and other factors. For the average summer temperature of the central United States a humidity of from 40 to 60 per cent permits free evaporation of sweat and is conducive to free physical activity.

When the humidity is 100 per cent, or nearly so, there is little or no evaporation of the sweat;

the body heat is not reduced, and the streaming of the sweat over the body surface makes the person more uncomfortable. A person will succumb to heat stroke in a surrounding temperature of about 90 F. when the humidity is 100 per cent; whereas, if the humidity is low and the air is dry he can withstand a much higher surrounding temperature. In fact, if the air is perfectly dry, it is said that man can withstand a surrounding temperature of 250 F. It is the humidity that renders low, hot areas so disagreeable and so dangerous to life, especially in the event of physical activity, while a higher, dry region of the same temperature is quite bearable and is withstood comfortably.

Perspiration may be classified as normal, excessive, fetid, colored and cold. What has been said so far refers to normal sweating. We must keep constantly in mind that normal perspiration is a natural function, as necessary as the intake of water both in good health and in sickness.

The chief morbid conditions of the sweat glands are hyperhidrosis (excessive sweating) and bromidrosis (fetid sweating). Both conditions are relatively common. Chromidrosis (colored sweating) is also a morbid condition, but it is relatively rare.

Hyperhidrosis is due to a functional disturbance of the sweat glands, and the exciting causes may be (1) infection, such as malaria or tuberculosis; (2) certain types of rheumatism; (3) disorder of the thyroid gland; (4) diabetes mellitus; (5) disease of the heart and blood vessels; (6) disease, tumor or injury of the brain; (7) excessive use of stimulants such as alcohol and strong tea, and (8) excessive use of tobacco. The condition may occur during pregnancy, although as a rule the activity of the sweat glands is diminished during that period. It may also occur during the menopause.

HYPERHIDROSIS is common in extremely nervous persons. It may be concerned with the state of mind and often is based on fear. Some persons have excessive sweating of the palms when meeting strangers. Every one has heard the threat, "I'll make him sweat," and it is common knowledge that excessive sweating may occur generally or locally when one is under stress. Free generalized sweating may also occur if there is too much salt in the food, for this may cause a natural cycle of excessive thirst, excessive drinking of water and excessive sweating. In most cases of hyperhidrosis, however, there is a vasomotor disturbance of the blood vessels of the skin. Regardless of the exciting cause the natural result is profuse sweating.

Hyperhidrosis may affect the entire body; it may affect only one part, one extremity or one side, or it may be limited to a small area. In one reported case it occurred only at the back of

the head and the nape of the neck. In another case the area was above the left eye and was not more than two inches in diameter. Profuse sweating of the feet is a common complaint of many persons. As a general rule, excessive sweating is not detrimental to good health unless it extends to the point of weakening the body. When it occurs temporarily, as under conditions of hard physical labor or strenuous exercise, it is natural and necessary. When it is abnormal and continues for a prolonged time it may be quite weakening.

In generalized, profuse and prolonged sweating there is a great loss of water and often a marked loss of salt. Instead of the normal amount of approximately one quart of sweat in twenty-four hours several quarts of water may be so eliminated in the same length of time. In normal sweating the amount of salt lost is insignificant, but in profuse sweating the amount lost may be considerable. When the amount of water and salt so eliminated reaches the point of weakening the body a person's symptoms may vary from mild fatigue or muscular cramps to a feeling of extreme lassitude. The cramps do not occur if a weak salt solution is drunk instead of water. Likewise, when one is hot and tired and has sweated profusely a drink of salt water is more refreshing than plain water. That is because it replenishes both the water and the body salt lost by sweating.

EXCESSIVE sweating between and under the toes frequently leads to softening and breaking of the skin with considerable discomfort and soreness. It is self diagnosed by many persons as "athlete's foot," a common name for ringworm or epidermophytosis of the feet. The condition is not athlete's foot and seldom requires special treatment unless infection develops, although it does require special care. The care indicated is a cleansing foot bath once or twice daily, thorough drying of the feet and between and under the toes, and the generous use of an absorbent, antiseptic powder between and under the toes. Zinc stearate powder is recommended for this use. The hose should be

changed daily or oftener. These measures will relieve the average case satisfactorily.

Night sweating is a form of hyperhidrosis occurring most commonly in pulmonary tuberculosis. In this disease it is usually a cold sweat coming on toward morning. As with other forms of hyperhidrosis the sweating may be generalized or confined to a large or small body area.

Bromidrosis may be due to (1) offensive substances eliminated from the blood through the sweat, (2) localized germ growths in and on the skin which contaminate the sweat or (3) chemical decomposition of the sweat on the body surface due to infrequent bathing or change of clothing. Thus, a person's sweat or body odor depends much on his eating, drinking and bathing habits and on whether or not his kidneys function normally. Since the sweat comes from the blood, and the blood absorbs anything absorbable from the digestive tract, the sweat may contain any odors that are in the blood. In some cases the sweat has the odor of garlic when that is a regular article of diet and of urine when the sweat contains an excessive amount of urea. Sweat with a urinary odor is most common in certain types of kidney disease—the sweat glands attempt to compensate for the impaired kidneys. An offensive odor from localized germ growths is usually due to Bacillus foetidus. Such sweat usually smells like putrid cheese.

In most cases, body odor is disagreeable, but some surprising exceptions have been reported. In 1877, Hammond reported cases of persons with perspiration of violet or pineapple-like odors. Such cases, however, are so rare as to be medical curiosities.

What to do for body odor depends on the cause. If it is an odor, as of garlic, coming directly from the blood, the substance causing it must be eliminated from the diet. If it is due to infrequent or incomplete bathing or change of clothing, it can be corrected by adopting these measures more often or more completely. If it is due to a kidney disease, it may not be possible to correct it at all. That will depend on whether the disease is amenable to treatment. If it is due to growth of foetidus in or on the skin, it can usually be corrected by a complete bath once or twice daily with a free lathering toilet soap and plenty of water. Special soaps or bath salts are not necessary, but in some instances it may be advisable to supplement bathing with perfumes or scented powders. A person with a disagreeable body odor not traceable to disease or offending articles in the diet should first try the daily bath regimen of soap and water. That will correct the great majority of cases. If it does not correct a particular case, that person should then consult a physician to learn what should be done further.

Chromidrosis is the general term for any type of colored sweat. Black, blue, green, red, brown, yellow, phosphorescent and bloody varieties have been reported, but all forms are rare. The false types are more common than the true types. The false types are due to the presence of color-producing micro-organisms, or tinctorial substances, in and on the skin. In such cases the condition is usually localized as on the eyelid, breast, hand, limb or trunk or in the armpit. The hairy surfaces, probably more than others, lend themselves to the appearance and production of the false types. The true types of chromidrosis are extremely rare and in some instances are known to be due to the ingestion or inhalation and absorption of the salts of potassium, copper, iron or other chemicals.

The black form of colored sweat is most common. The blue form is next in frequency. It is by no means proved, but the color in true blue chromidrosis may be due to indigo, derived from the indican produced in the intestine. Persons with blue sweat are usually women who are neurotic in type.

Green sweat occurs in some copper workers. In this instance it is due to inhalation and absorption of copper dust which is then excreted in the perspiration.

Yellow sweat is exceedingly rare.

Phosphorescent sweat is characterized by a faint glow, best seen in the dark. It has been noted following the ingestion of certain kinds of fish and has also been observed in persons with certain systemic diseases.

Bloody sweat is characterized by blood or blood pigment and usually indicates purpura hemorrhagica, a disease of the blood with hemorrhages into the skin. Blood readily escapes from the vessels as a result of changes in the blood and probably of changes in the blood vessel walls. It naturally finds its way into the sweat glands and so is excreted in the perspiration. In this disease, if bloody sweat occurs it may occur anywhere on the body surface but is most logically found over or around the hemorrhagic areas. Bloody sweat is rare. While it usually occurs in purpura, if at all, it occurs in only a small percentage of such cases.

Cold sweat is generally produced under conditions of emotional shock, as in fear, serious physical injury and the like. It is secreted while the blood vessels of the skin are constricted and the skin is pale and chilly. As soon as the sweat is released from the warmth of the blood it naturally becomes chilled immediately to conform to the temperature of the skin. It feels clammy, for it remains on the chilly skin surface, lacking the warmth to evaporate. It is normal sweat produced under abnormal conditions and subjected to abnormal skin temperature. *(Continued on page 640)*

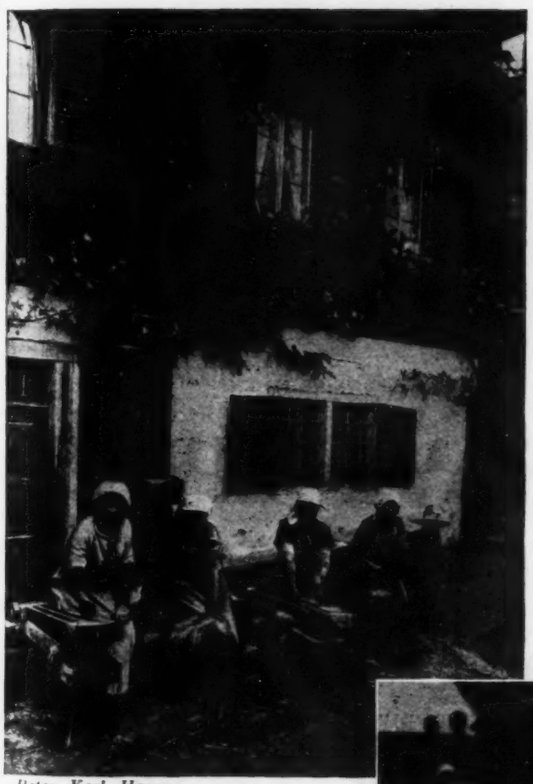
NEWS AND VIEWS

D. Deutsch

BASKET MAKING AND WEAVING GO MORE PLEASANTLY AT THE ROLLIER SUN CLINIC, LEYSIN, SWITZERLAND, IF ACCOMPANIED BY MUSIC.

Science Service

THE CAMERA CATCHES A TINY BUNNY AT THE FIRST MOMENT AFTER BIRTH WHEN HE IS STILL ATTACHED BY THE UMBILICAL CORD TO THE MATERNAL PLACENTA, FROM WHICH HE WAS NOURISHED.

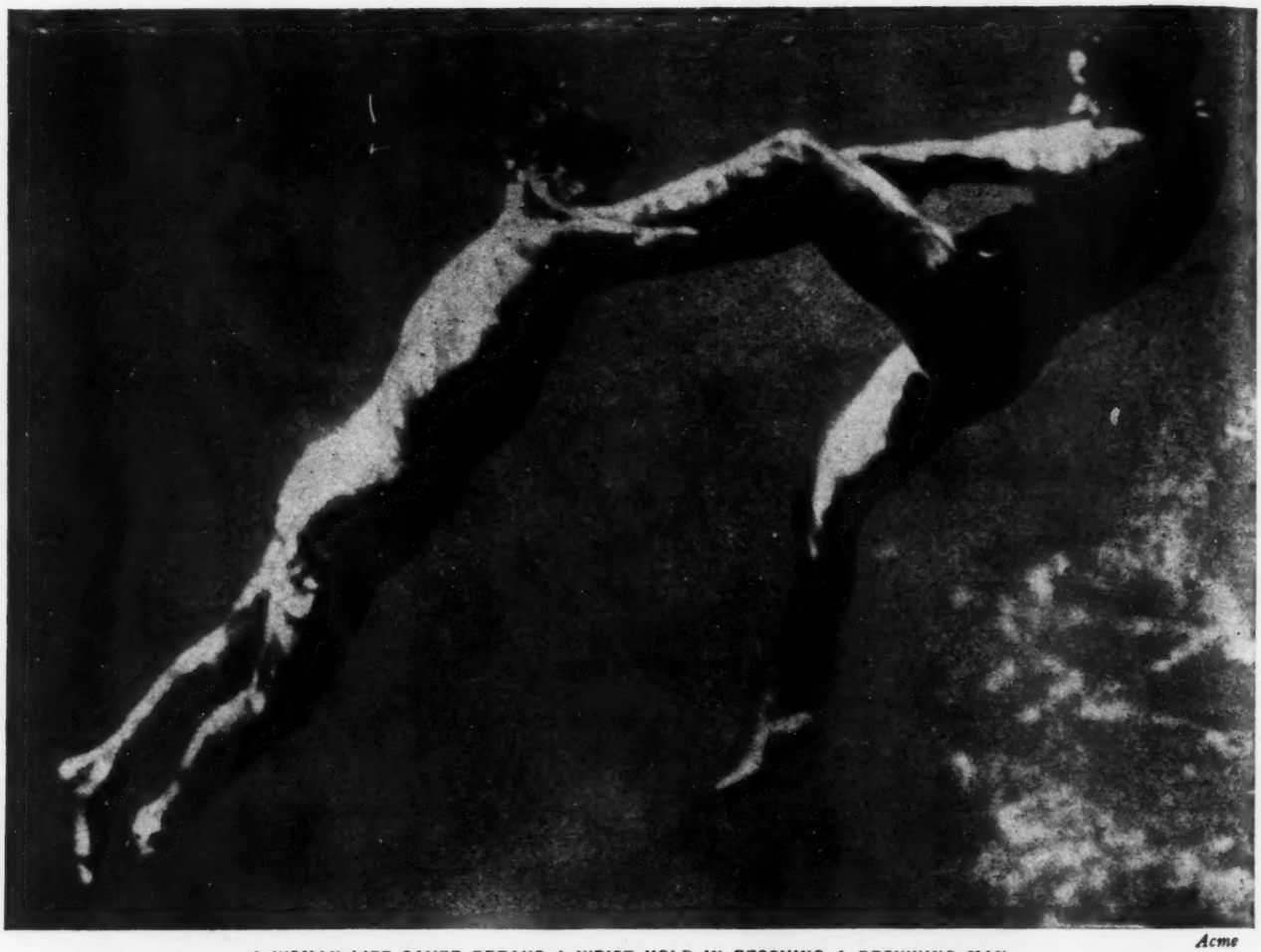


Pater Karl Hager

FLAX RAISING, SPINNING AND WEAVING ARE STILL DONE IN SOME SWISS DISTRICTS AS SHOWN BY THIS GROUP OF GIRLS WHO ARE ENGAGED IN ONE OF THE SEVERAL ALLIED PROCESSES.

Brown

AUSTRIA PREPARES HERSELF FOR A WARTIME GAS ATTACK. SOLDIERS AT WELS ARE AT WORK IN RUBBER SUITS AND WOODEN SHOES DISINFECTING THE STREETS WITH CHLORCALCIUM AFTER AN EXPLOSION.



Acme

A WOMAN LIFE SAVER BREAKS A WRIST HOLD IN RESCUING A DROWNING MAN.

LEARNING to SAVE LIVES

THE INCREASE in leisure, which is one of the outstanding developments in recent American life, has brought with it many changes in our national mode of living. Most of all it has affected our outdoor pursuits. We used to look with wonder at the leisurely week-end of our English cousins, with its let-down in business activities and its wholesale participation in outdoor games and sports by every one, from grandfather down to toddler. *We* took *our* exercise reading the sports page and following the baseball scores.

Now we have caught up with our British exemplars, and with typical American thoroughness we are in a fair way to outdistance them. Sports have become the order of the day, and many persons work harder at their favorite diversion than they do at the humdrum job of making a living. And if such land sports as golf, tennis, camping, hiking and riding have increased by arithmetic progression, then nothing but geometric ratio can be used to express the spread and intensification of our participation in sports having to do with water, both fresh and salt.

Most of the older generation can remember when we packed a large suitcase with bathing apparatus, consulted the clock to make sure that our last meal was at least two hours behind us and to start the timing of the twenty-minute period we allowed ourselves, and lumbered gingerly and by chilling degrees into the water. A manful breasting of the deep that carried us out to the float by alternate breast stroke and swimming on our backs, two or three froglike dives in which tummies resounded when they "ker-flopped" on the surface, and it was time to start paddling back to shore before the twenty-minute deadline was reached and passed.

TODAY, all that is changed. In costumes that are briefer each year, forgetful of the dangers of cramp or sunburn or exhaustion we seek the shore early, spend all day at our elaborate water activities, eat without a thought of cramps and practice the most elaborate of strokes, flips, dives and underwater gymnastics. And old Mother Nature takes the toll, just as she always has done with those who disregard her warnings.

Now that the change in style in bathing togs has justified the proud boast of one manufacturer that his suit "has changed bathing into swimming," even the colleges have become "water conscious." Several now require that before being graduated, a student must demonstrate his ability—yes, and *her* ability, too!—to swim acceptably. And the old kinds of swimming are just as out-of-style as the old kinds of bathing suits. Style, finish and clean execution are essential if the bather of today would not be laughed off the beach by more capable associates. In fact, a whole new science of "natatation" has come into existence; and it requires both expert instruction and carefully thought out safety precautions if it is to be learned properly and practiced acceptably.

ADD to all this a whole set of health hazards and accident potentialities, such as cramps, drowning, sunburn, sinus trouble, disorders of the ear from changes in pressure due to diving and underwater submergence, infections of skin, eye, nose and throat from improperly maintained swimming pools and bathing beaches—all of them preventable—and a problem of the first magnitude is presented. In fact, it requires planning on a nationwide scale to meet such a situation. And this nation has long since gotten into the habit of turning for nationwide assistance in matters of this sort to the American Red Cross.

As usual, it was not in vain. Fifteen years ago this national organization mobilized to meet the great need on the nationwide basis that alone could cope with it. In 1922 the first of the first aid and life saving institutes was opened; later it developed into the present elaborate and comprehensive national aquatic schools that occupy a unique place in the world of water sports. Four of these in the Northeast, two in the South, two in the Midwest and three in the Pacific area offer to the water-minded folk of the nation the opportunity to learn all that there is to be known about the advancement of health, safety, skill and pleasure in the great outdoor world of water sports.

WE MAY get a better idea of just what is offered in these aquatic schools if we study one of them at close range. Suppose we look at the one held each year at Camp Carolina, near Brevard, high up in the Blue Ridge Mountains in beautiful western North Carolina, a summer camp for boys. Use of the whole plant, with its regulation water-front, beautiful lake reflecting the surrounding mountains in its still surface and its commodious buildings for living, work and play, has been granted to the Red Cross by the managing director of Camp Carolina. This arrangement is made without compensation as in the case of all the other institutes and in recognition of the importance and esteem in which these safety schools are held by leaders in the outdoor-life movement in America.

IN THIS ideal setting, Ramone S. Eaton, a national staff member of the First Aid and Life Saving Service, has gathered about him a volunteer faculty of a sort that could not be assembled by any private agency, even for a large salary expenditure. Among its members last June were to be found an Olympic diving champion from Miami; a past captain of the St. Augustine Life Saving Corps in charge of boating; a nationally known swimming coach from Fort Lauderdale, and college coaches, physical education specialists and experts in first aid, galore.

Two hundred and nine students, both men and women, assembled from thirteen states of the Union to profit by the varied kinds of instruction given by this unusual staff. The student body included teachers of physical education, school teachers, safety engineers both state and national as well as others representing government agencies, swimming coaches and instructors, municipal recreation directors, representatives from Army and Navy posts, and college boys and girls preparing for their life saving tests.

The appreciation felt by these students from various walks of life is indicated by the fact that one of them hitch-hiked 700 miles in order to attend the institute. Its value is further shown by the fact that others, both men and women, left regular positions to be filled by assistants or others in order that they might take advantage of the various lines of activity offered and the new ideas in swimming pedagogy presented.

THE course of instruction is so arranged that all students take what is called the basic, or fundamental, course their first year. As it is very desirable, though not absolutely essential that every candidate should qualify as a Senior Life Saver in order to be eligible for admission, it may readily be seen that this is no course for beginners. It is absolutely required that any one who takes even the first course be a fairly good swimmer.

This basic course teaches all skills on the principle that the best form of pedagogy consists in "learning by doing." At the same time, while the skills are being mastered by the pupil he is acquiring a basis of sound teaching principles on which he can build his own individual system of instruction when he gets back to his home station, for the whole course is essentially one for "teaching teachers." And the business of

By FRANK HOWARD RICHARDSON

STYLE, FINISH AND CLEAN EXECUTION OF TECHNIC ARE THE ESSENTIALS OF THE SWIMMER OF TODAY IF HE IS NOT TO BE LAUGHED OFF THE BEACH BY HIS MORE CAPABLE ASSOCIATES.

H. Armstrong Roberts

teaching folks to swim has progressed a long way from the state in which it was when the mother of fond memory told her daughter just where to hang her clothes and what distance to keep from the medium in which swimming instruction is conducted nowadays.

As a result of the work done and the instruction given during this basic course, any student should be able to qualify as a lifeguard, a swimming supervisor, a camp swimming counselor, a volunteer instructor or an assistant swimming instructor; and he will be enabled to discharge his duties in any of these capacities with confidence. Some of the features of the course are instruction and practice in (1) the latest and best methods of teaching beginners to swim; (2) the "progressive part method" of mastering swimming strokes; (3) plain forms of diving; (4) the progressive method of learning fancy diving; (5) stunt swimming to develop "seaworthiness"; (6) prevention of sickness, accident, infection and disease, and (7) recreational swimming.

Throughout the course basic water safety, the most important of all considerations, is ingrained in the student, so that he takes it for granted in all his activities without special thought for it.

The principles stressed in teaching life saving at these camps include (1) fundamentals of personal and group safety in the water; (2) rescues from shore, including reaching, poles, floating supports, ropes and ring buoys; (3) boat rescues of all sorts; (4) wading rescues, including "swift water" and the "human chain"; (5) swimming rescues, "free" and with the torpedo buoy, and (6) body recovery and resuscitation. Methods of teaching all these principles are given to the students to enable them to pass the information on to their own classes.

In order to give the best instruction in the small craft course, featuring rowboats and canoes, it was necessary to select a camp which had not only an excellent lake but also proximity to a river which afforded fairly typical conditions, such as would be met by canoers in other places. Camp Carolina has a beautiful lake and in addition it is close to the French Broad River, which winds its tortuous way to unite with the Swannanoa near Asheville.

The chief event of interest for the students taking the advanced course is the all-day canoe trip on the French Broad. Because of the large size of the advanced school last year, this had to be taken in two sections. For most of the distance the water is swift and over rapids. This makes possible training by actual experience that is priceless for students in canoeing. Both instructors and students expressed themselves as having learned more about actual paddling in this one all-day trip than they had in the entire ten days of the course.

For students whose main interest is not in water sports but in first aid and the prevention of accidents, a special course is provided, for which swimming ability is not required of registrants. In addition to this, all students are required to take the basic and advanced courses in life saving, which is one of the most dramatic and intensely interesting subjects taught. Some of the unusual features stressed in the advanced life saving course are canoe rescue, surf rescue, ice rescue and use of the surf board in life saving.

In addition to these required courses all sorts of combined lecture-seminar courses are offered

in subjects relating to programs for Red Cross chapters, the community, camp, pool and bathing beach. Organization and best use of equipment, planning of pageantry and regular water sports programs, conduct of play days, tournaments and meets are discussed in groups arranged for those interested in these phases of their profession.

The complete course, which is held in June of each year, occupies ten days. The fee is $30, and there are no extras. Application is to be made direct to the American National Red Cross, First Aid and Life Saving Service, Washington, D. C. All students have exactly the accommodations and quarters used by the boys who later occupy the camp, sleeping outdoors in well screened cabins (though mosquitoes are noticeable by their absence in this favored land). These cabins are arranged in a sweeping semicircle, or crescent, overlooking the lake, which is the center of camp, with its regulation water-front. In the distance is the camp golf course, one of the few in the country which is owned, operated and used exclusively by a private camp and its guests. All sorts of community social life and fun are featured, so that the days are crammed with work, play and interesting social intercourse among persons of similar tastes and common interests.

ALL STUDENTS who successfully complete the course—and there is no reason why any one who comes to the institute with a serious purpose should fail to do so—are certified on regularly issued aquatic school certificates. In addition, successful completion of one of the first aid and life saving courses qualifies the student to be certified as senior life saver or examiner, or to be rated as standard, advanced or lay instructor in first aid. Appointment as examiner in life saving or as lay instructor in first aid is dependent on the actual need for certification.

TO THOSE who are genuinely interested in the conservation of life as well as in the increasing popularity of water sports of all sorts, it will be heartening to learn that more and more camps, bathing resorts and other institutions that feature bathing are demanding that applicants for the post of lifeguard or swimming counselor be graduates of one of these regularly constituted national aquatic schools. The time has gone by, or will soon have gone by, when dressing up an athletic-looking young man in an abbreviated bathing suit with the words "Life Saver" emblazoned across its front will "get by" with a public that is becoming accustomed to the sort of professional training that is given at these institutes.

LIFE saving and swimming instruction have ceased to be matters of casual interest, to be left to chance or neglected altogether. Instead they are engaging the serious attention and profound thought of educators, who are determined that the toll of bathing fatalities from illness and accident must be reduced to the irreducible limit. The prime factor in this effort is the consistent, painstaking program of work and fun offered by the American Red Cross in its national aquatic institutes.

American Red Cross

THE BASIC COURSE TEACHES ALL WATER SKILLS ON THE PRINCIPLE OF "LEARNING BY DOING."

WHAT CHANCE HAS

By ALVIA BROCKWAY

SCATTERED OVER this country is an army of no small number of children who are more neglected perhaps than any other group of handicapped patients. These are the patients whose motions are spastic and tense; the simplest motor endeavor is a clumsy, awkward struggle, and if they walk at all, their tense, struggling gait is apparent even to the untrained eye.

How many such children there are is difficult to say; but some impression of the number may be obtained from the fact that in the clinic of an orthopedic hospital serving a large metropolitan district on the Pacific Coast more than 1,100 of these patients have been seen during the past fifteen years.

This condition is known as spastic paralysis, a condition which in reality is not a true paralysis but rather a lack of control of motion and coordination which makes it impossible for the patient to make use of his limbs in a normal fashion.

At birth during labor there occurred a hemorrhage or several hemorrhages of the tiny delicate blood vessels within the complex, highly specialized nerve centers of the child brain. The death rate following such an accident is high, and if the baby survives, two major handicaps may follow: First, there is the spastic, uncoordinated muscle control already mentioned; and as a second and even greater handicap, there is usually a varying degree of mental impairment. This lack of mental development is not so apparent at first; but as the child grows, it becomes more and more evident that he is not able to compete mentally or physically with the normal child of the same age.

Some of these children are normal mentally, while others are almost total imbeciles. The average intelligence quotient of the series previously cited was about 79.

Primarily, it is because of this mental impairment that these patients have not received the care that is due them. Those who are more severely handicapped mentally are sent to state institutions, where relatively little is done in the way of prolonged systematic training. Because of lack of time and money in busy orthopedic clinics there is too often the tendency not to give them adequate training. Because this training requires time and patience, treatment, and possibly rightly so, is centered on the more favorable patient who will show bigger dividends when the final results are measured.

However, society owes these children adequate care. Under favorable conditions worthwhile results can be obtained if the child comes under the care of doctors who are trained in dealing with this type of patient.

While it is true that skilled obstetric care before and at the time of delivery will prevent a certain percentage of these hemorrhage accidents, in many cases the factors causing the rupture of the small vessels of the brain are beyond the control of the medical attendant and will always be a hazard of child bearing that even the most expert obstetric care cannot reduce to zero.

Because of the location of this brain hemorrhage, brain surgeons are to a large degree helpless to remove the blood clot at the time of birth except in those few cases where the hemorrhage is superficially located and accessible to the surgeon's knife. The tendency now is to drain the accumulated blood by repeated spinal punctures during the first days of life. Such a procedure is safe and has given worthwhile results.

THE SPASTIC CHILD?

Later the problem is primarily an orthopedic one. The general practitioner of medicine is usually not equipped either by training or by inclination to treat these patients or advise the parents.

All too frequently the child is dismissed with a superficial examination, and no adequate outline of treatment is presented to the parents. As a matter of fact, even at an early age the mother can be instructed in exercises and gentle stretching manipulations that are of distinct benefit in improving coordination of muscular acts and in preventing deformities.

When these patients are older there follows a long period of training in the gymnasium, the hydrogymnasium, gait training, mental training under the direction of a competent medical psychologist, speech work for those that require it, bracing and surgery.

There is still much tendency toward a too narrow outlook in the care of this type of patient. In surgical clinics, too often, the grosser deformities are corrected, but the training aspect is not given proper emphasis. On the other hand, training schools for spastic children are too prone to carry on exercises and gait training in the presence of contractures of the joints.

Balance and walking are difficult for the child just beginning to take his first steps; and if added to this there are flexion deformities so that the child cannot straighten his hips, knees or feet, or if he is unable to get his heels to the ground, then the patient faces a difficulty that is almost insurmountable. These deformities should first be corrected surgically, so that in standing the center of gravity passes through the center of the body, thereby making balance easier.

In most cases following surgery there should be adequate bracing for two definite reasons: First, the braces prevent a recurrence of the deformity, and second, the braces are so constructed that motion in only some of the joints is permitted at first. Control of motion of all the joints required for walking is a highly complex mechanism for the spastic child. Therefore at first it is better to concentrate his efforts on fewer moving parts, and later the braces are adjusted to permit motion in other joints. This principle has been found to be sound in theory and in practice.

Contractures of joints also occur in the upper extremities because of tight, overactive muscles. This unequal muscle pull is due to an uneven, haphazard flow of nerve impulses from the brain to the muscles which in turn is caused by the scar in the brain following the hemorrhage at birth. The master dynamo has been thrown out of order, and instead of a smooth and orderly flow of nerve impulses, there prevails chaos and misdirection.

These joint contractures and tight muscles, if at all severe, should be corrected first by gentle stretching in plaster casts or surgery. Following this, training of the extremities will be greatly facilitated.

No discussion of the spastic child would be complete without some discussion of the mental aspect of the problem. It is true that the hemorrhage into the brain usually causes a varying degree of mental damage that will remain forever. However, we often get a wrong impression of the mental capabilities of the patient. Consider the child of 6 or 7 years who has never walked and who has been from birth a constant care of the parents. From the very nature of their physical disability patients such as this have not had the normal contacts and training of other children. They lead a sheltered existence, are constantly waited on by overanxious and distraught parents and because of their disability are unable to express themselves in a motor or physical way. Is it any wonder that we normal individuals usually undervaluate their mental potentialities?

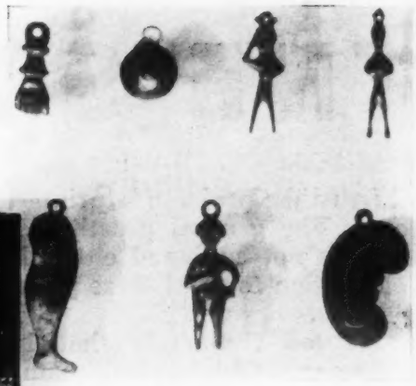
It is a sound biologic law that states that mental capacities grow as we become more adept in the use of our hands. In other words, we grow mentally as we learn to express ourselves in a physical way. If we apply these principles to the child previously mentioned who could not walk at 7 years, if we teach him to walk and use his hands, that is, train him so that he is physically more like a normal human being, the results will probably prove that we have erred in our opinion of his mental capacity.

The training required for spastic children demands time, patience, an adequate physical set-up and a skilled personnel. Aside from the orthopedic care, provision must be made for speech training, neurologic examinations, mental training and schooling.

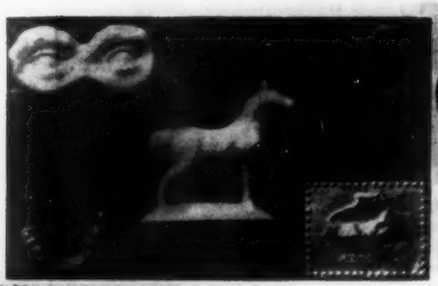
Assuming that we start with a child of fair intelligence, a great deal can be done for him. Converting a bedridden child into one who can walk and take care of himself is in itself an objective of sufficient importance to make our efforts worth while. Not only are we reclaiming that individual, but we are lessening the burden of those charged with his care.

Magic Medicine

By S. R. WINTERS



SILVER TALISMANS REPRESENT IMAGES OF DISEASED PARTS—THE HAND, THE BREAST, THE HEAD, CHEST, LEG, HEART AND LIVER.



EX-VOTOS ARE TINY IMAGES BROUGHT TO CHURCH IN BELGIUM AS A THANK-OFFERING FOR HEALTH AND CURE FOR DISEASES.

AMONG THE OBJECTS PRESERVED ARE THIS WOOD CARVING OF A NAKED INDIAN, CLAY IMAGE OF A MOUNTAIN LION AND A FETISH OF RAWHIDE AND BEADS.

Courtesy, Smithsonian Institution

"SEND FOR THE DOCTOR," most of us enjoin when learning that a person has become ill or injured. We counsel, "Consult your physician," for this has become traditionally sound advice. With implicit faith we leave the major responsibility to the medical man. Furthermore, we take it for granted that all human beings react similarly when physically afflicted. However, this is not true. The doctor of medicine is not universal, and even in regions where he does practice his scientific healing he is ignored by elements of the populace who have strong belief in the efficacy of magic medicine.

Persons who do not send for the doctor place their confidence generally in the effects supposedly wrought by supernatural or spiritual beings, departed spirits or the occult powers of nature. By means of various invocations, sacrifices, incantations and ceremonials, prayer is offered for the assistance of gods or demons, the aid of disembodied spirits of men, animals, plants or minerals, or the influences residing in, or exerted through, certain natural objects. Magic medicine is especially characteristic of the early stages of human development when all natural forces were personified and diseases and death were believed to be caused by malignant spirits. However, faith in magic medicine is far more prevalent today than is commonly imagined.

In the section on history of medicine at the Smithsonian Institution in Washington, D. C., there is a rabbit's foot acquired by purchase in recent years from a Southern market woman. If the right forefoot of a rabbit were carried in one's pocket, she insisted, rheumatism would surely be prevented. Another rheumatic preventive is a horse chestnut which has been either begged or stolen and carried about habitually. This superstition is widespread among all classes of society.

THE deer's foot is another accredited remedy. This, when warmed and rubbed over the painful areas, is said to relieve toothaches, swellings and itchings. The noted cure for ague has been a spider set in a nutshell. Longfellow poetized on this ancient remedy in "Evangeline":

> Only beware of the fever, my friends, beware of the fever!
> For it is not like that Acadian climate
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Seized with a cramp? The most renowned cure for the cramp is either the patella, or kneecap, of a sheep, or a cramp ring. The patella is worn next to the skin by day and tucked beneath the pillow at night. The ring, which is the sovereign charm used in China, England and in the United States, is a coffin nail which has been removed from the graveyard.

Day laborers everywhere are constantly in morbid fear of physical incapacitation. Frequently observed in the United States, buckled about the wrist of a workman, is a leather strap made from a horse harness. This amulet is supposedly endowed with the power to strengthen the muscles and the ligaments and to cure sprains and local infections.

Christmas is not the only season when the mistletoe is popular. Some persons believe that when the moon is only 6 days old small branches of mistletoe should be cut with a gold knife. If worn suspended from the neck, mistletoe is supposed to serve as a specific against epilepsy and as an antidote for poisons. In some regions the peony root is likewise deemed efficacious as a cure for epilepsy. If the root is carried in the pocket the bearer is freed from fear of insanity. Necklaces of beads made from this root are often worn by children to prevent convulsions.

THE use of charms is world-wide, especially where the belief in witchcraft, "evil eye" and demons is strongest. Charms are most favored by eastern countries. The Mohammedans habitually carry the Koran, their sacred book, as a protection against all danger. In England and in certain other European countries little ivory, metal and stone charms are popular. A "charmed existence" is promised the bearer of little images of the hand, the horseshoe, heart, tooth, elephant, merman or the horn.

In Belgium an old custom still prevalent is that of bringing objects to the church and offering them at the shrine for the purpose of obtaining a cure or to render thanksgiving for regained health. These images are called ex-votos. At the Smithsonian Institution there is a silver engraving representing the diseased breasts of a woman, which had been hung in a holy edifice as an appeal for divine aid to cure the ailing one. Waxen eyes, teeth and ears are also exhibited; these were removed from Belgian churches where they had been offered as tokens of thanks for the vanishing of diseases affecting these parts. Waxen animal images were likewise created in appeals for divine aid for afflicted domestic animals.

In every country there are certain objects said to be endowed with the power of working wonders. These are called talismans and generally bear cabalistic characters, words or signs on them. The Sudanese warriors carry small packets containing chapters of the Koran, which are carefully folded, covered with leather and protected from moisture by a resinous application. The magic wrought by the packet is supposed to ward off wounds and diseases. In many regions, women wear images of seahorses over their breasts to promote the flow of milk. Frequently seen in Cuba are talismans of silver, similar to the ex-votos, which represent images of legs, arms, liver and heart. Other common talismans are the "crescent hand," which is worn for luck, the "Eye of Santa Lucia," which is considered a magic cure for eye trouble, and the "hunchback" image, worn as a grotesque against disease.

One of the most widespread and persistent of superstitions is the belief that some persons bring misfortune, sickness and even death to other human beings. The American Indians feared that medicine men whom they had offended could wreak a magic, harmful revenge on their persons. The Indians would hide or avert their heads to escape the glances of the medicine man when in his presence. The belief in the existence of the evil eye has been sanctioned by classic authors and church fathers. In England during the seventeenth century two women were executed when it was voiced abroad that they had cast the evil eye on the Earl and Countess of Rutland and their two children, causing their deaths. Inhabitants of all sections of the globe have worn horns on their heads to ward off the evil eye.

DEATH so frequently followed the bites of venomous snakes or of rabid dogs that objects of unusual magic power had to be brought to the aid of the afflicted persons. Most widely employed in the magic cure of these poisonous bites have been madstones. They are said to have the power of avidly absorbing moisture,

Ewing Galloway

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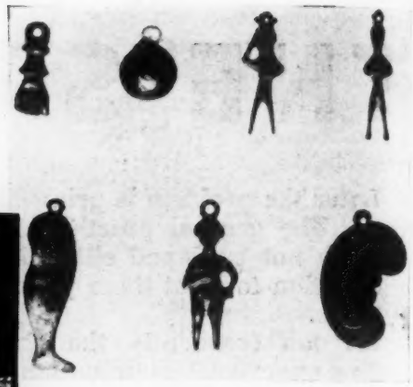

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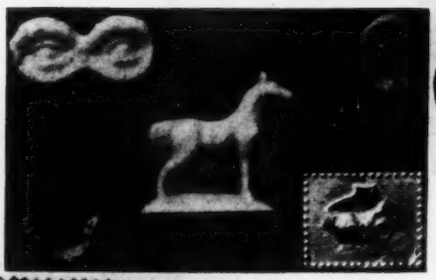

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E. H. Cassidy, Japan

ANOTHER BIT OF MAGIC MEDICINE HEALING IS PRACTICED BY ORIENTALS WHEN THEY THROW SPITBALLS AT THIS IMAGE, BELIEVING THAT IF THEY STICK TO THE CORRESPONDING PART THE PATIENT WILL RECOVER.

adhering to a moistened surface until nearly saturated. When applied to the venomous wound the stone is supposed to adhere until the poison is absorbed. The madstone is then boiled in milk to remove the poison. The Smithsonian Institution has an interesting collection of madstones. One is a ball of matted hair which was removed from the stomach of a cow; another, a pebble of carbonate of lime swallowed by a deer while grazing. This was found by an Apache Indian of New Mexico when he was carving the animal. Another common form of madstone is a biliary calculus, or gallstone, formed in the gallbladder of an ox.

WHEN people talk of fetishes they think of fads or obsessions. Modern parlance has distorted the true meaning of the word. Fetishes are perhaps best defined as material objects believed to be the dwelling of a spirit or the representation of a spirit, which may be induced or compelled to help the possessor. The North American Indians created many elaborate fetishes. Most notable of those at the Smithsonian are the wood carving of a naked Indian, squatting in impersonation of a quadruped, and a clay image of a mountain lion. Zuni superstition teaches that the spirit of the mountain lion guards the North, and is master of the gods of the hunt. The hunter makes invocation to the indwelling spirit of the mountain lion for assistance in the pursuit of game and for protection against injury.

A prevalent notion entertained by Europeans up to the eighteenth century was that the Creator, in providing herbs for man, had stamped an unmistakable sign on them to indicate their remedial value. One early writer, Crollius, who wrote a treatise on these "signatures," highly recommended walnuts for their medical efficacy. "Walnuts," wrote Crollius, "have an entire signature of the head." Walnuts are accordingly prescribed for mental troubles. "For if the kernel beaten be moistened with the quintessence of wine, and applied to the crown of the head, it comforts the brain and head wonderfully."

PRECIOUS stones have always had magic powers attributed to them. This is especially true in the continents of Europe and Asia. Many persons still affirm that the opal indicates the state of health of the wearer, losing brilliance when its owner is ill. The lapis lazuli is today used as a laxative in India, Chile and Peru. The stone is also supposed to cure melancholia. Innumerable magic powers have been attributed to amber. In the fifteenth century, Camillus Leonardus declared that the amber "assuages pain in the stomach, and cures jaundice, flux, and kidney evil." In the United States it is still used for the supposed relief of toothache and dropsy, and in Lombardy and Piedmont in Italy for the "cure" of goiter. Persians prescribe the onyx and ruby for epilepsy.

The list of the various benefits derived from wearing coral includes the stoppage of blood, the hardening of diseased gums, dispelling ghosts, illusions and dreams, and the relief of stomach pains. Hung on fruit trees the coral insures fertility. Coral beads are frequently hung about children's necks as a charm against childhood diseases. In the second century the eminent Greek physician Galen recommends that the jasper be worn next to the skin, over the stomach, for dyspepsia relief. Many centuries later in England we find in Burton's "Anatomy of Melancholy": "If hung about the neck or taken in drink, it [the jasper] much resisteth sorrow."

Certain stones are supposed to exercise their greatest power in special months. Each of these zodiac stones, or birthstones, is endowed during these months with the supernatural gifts of curing specific parts of the body. The garnet, for example, is reputed to cure leg ailments in January; the sapphire to heal neck ailments in April; the ruby, knee afflictions in December.

Evil spirits which wrought disease and death could not be ignored. When material objects could not cast them out, then formal ceremony and magic formulas were final hopes. Exorcism

as a mode of healing the sick was practiced in the earliest days of medicine and is still an important art among primitive peoples. The medicine men were the prominent figures in the exorcism ceremonies. Elaborate, artistic paraphernalia were the magic symbols used in this art. Fantastic, ingenious, carved rattles and masks and fancifully decorated costumes were part of the ceremonial garb of the Indian medicine man.

Invocations or prayers offered for the assistance of disembodied spirits of animals or men, the mythical gods and heroes, or the Deity accompanied other remedial measures as a means of curing disease. In ancient Egypt, while preparing medicines the following invocation was said to the goddess Isis:

> May Isis heal me, as she healed Horus of all the ills inflicted upon him when Set slew his father Osiris. O Isis, thou great enchantress, free me, deliver me from all evil, bad and horrible things, from the God and Goddess of evil, from the God and Goddess of sickness, and from the unclean demon who presses upon me, as thou didst loose and free thy son Horus.

The communal belief of some Indian tribes was that rheumatism was caused by revengeful spirits of slain animals, especially the deer. The doctor, in an effort to summon the aid of a more powerful spirit, in separate prayers, invokes the aid of the Red Dog of the East, the Blue Dog of the North, the Black Dog of the West, the White Dog of the South and finally the White Terrapin of the Mountain. While the prayers are being recited the afflicted parts are rubbed with a solution of fern roots. At the end of each appeal the doctor blows once on the part. Toothache is supposed to be caused by a worm which wraps itself around the base of the tooth. A similar invocation is made by the doctor in the toothache ceremonial. The doctor calls on spiders to let down threads to draw up the intruder.

The Greeks and the Persians sought cures through incantations, or magic words. These were either said or sung. A famous incantation is the repetition of the word "abracadabra," systematically removing letters from the beginning and the end of the word in this manner:

ABRACADABRA
BRACADABR
RACADAB
ACADA
CAD
A

An oft repeated incantation is the one for the ague, which is said by the eldest female of the family on St. Agnes' Eve:

Tremble and go
First day shiver and burn
Tremble and quake
Second day shiver and learn
Tremble and die
Third day never return.

William La Varre from Gendreau, N. Y.

THE "GRANMAN" OR CHIEF OF THE DJUKAS OF DUTCH GUIANA DOES NOT TRAVEL WITHOUT BEING ACCOMPANIED BY HIS PERSONAL PHYSICIAN, THE MEDICINE MAN, WHO, PROPERLY PAINTED UP, KEEPS THE DEVIL AWAY FROM HIS PATIENT.

The "prayer and incantation for visiting of sick folkis" of Agnes Sampson, a renowned English witch, was one of the evidences against her which caused her to be burned in 1590.

ANOTHER fairly universal belief was that diseases could be transferred to animals and to other persons. Alarmed parents have been known to remove the hair of a child suffering from whooping cough, setting this hair between slices of bread. The bread is then fed to a dog. If in eating it the dog should cough, the disease will be transferred to the dog. The "Encyclopedia of Superstitions" recounts this advice:

> If you can get a few strands of your enemy's hair, bore a hole in a tree, put them in, and plug up the hole. You can thus give him a headache which cannot be relieved until his hair is taken out of the tree.

Racial and tribal superstition fostered the practice of folk medicine. Such magic ceremonies as sorcery and witchcraft were the logical creation of half civilized peoples who believed that disease was a spirit, acting at the suggestion of a human enemy possessing supernatural powers. In all cases, magic medicine was practiced as a means for self preservation, for "where there is life, there is hope," even if that hope happens to have been misplaced through ignorance.

New Books on Health

THE MENSENDIECK SYSTEM OF FUNCTIONAL EXERCISE

By Bess M. Mensendieck. Cloth. Price, $12. Pp. 154. Illustrated. Portland, Me.: The Southworth-Anthoesen Press, 1937.

THE AUTHOR aims to educate the muscles according to mechanical laws which underlie their operation and to improve automatic muscle function as it subserves daily movement, so that the effect of the muscles on the body structure may be constructive and physiologically correct.

There is a schematic drawing by Professor Kappers which illustrates the scheme of muscle sense protection and motor adjustment. It attempts, in a diagrammatic semi-anatomic manner, to indicate the anatomic and neurologic basis for skeletal muscle action.

In this, the first volume, are discussions of body mechanology, constructive automatism, destructive automatism, weights of body masses, mind and muscle, rhomboideus exercises, pelvic rocking exercises and the round forward trunk bending exercise.

The author stresses the importance in schemes of physical education of the training needed for visually appreciating the beauty of perfect movement and for deriving the justifiable esthetic satisfaction that is obtained therefrom.

By perfect movement she means the skilful management of the body itself through a mastery of the science of movement, whereby muscles are made to act on bone in correct physiologic sequences and in perfect rhythm with the laws of body mechanics. She emphasizes the importance of the acquisition of body mechanics before the technic of any game itself is attempted. She believes that correct muscle control is the basic factor of an habitually well functioning body and that her system by its careful analytic study and training of the muscle mechanisms which operate to produce ordinary everyday movements can without apparatus, playing fields, instruments or music gradually build the body to that point of working perfection which is the goal of all the efforts on the part of physical educators.

She deplores the appalling ignorance in regard to the general structure of the human body and the mechanisms through which it functions. The laws of bodily movement, she says, are comprehensible only through an understanding of the laws of physics and mechanics. The body is an "assembly of masses" consisting of a system of passive bones, each of which is surrounded and operated by groups of muscles.

It is interesting to note that the author chose to use male figures for her illustrations. These figures are the finest that, to the reviewer's knowledge, have been published. Her sections on detailed analyses and the "whys and wherefores" are excellent.

The pelvis rocking exercise is given considerable and well deserved space. The last sentence in the book is: "The final realization that the body is the only machine with a self-governing apparatus, the brain with which to run itself, and at the same time to maintain itself undamaged." This book is a classic which should pay health dividends in every home and every doctor's office.

PHILIP LEWIN, M.D.

THE UNDAUNTED

By Alan Hart. Cloth. Price, $2.50. Pp. 310. New York City: W. W. Norton & Co., Inc., 1936.

IN THIS novel the author gives glimpses into the lives of the research workers whose sustained efforts bring to light new methods in the treatment of disease and new curative measures. The hopes, fears and struggles of Dr. Richard Cameron in his search for a weapon against pernicious anemia form the background for the dramatic pattern of research.

LEOLA J. HARRIS.

GENERAL SCIENCE FOR TODAY

By Ralph K. Watkins, Ph.D., and Ralph C. Bedell, Ph.D. Revised. Cloth. Price, $1.72. Pp. 715. Illustrated. New York: The Macmillan Company, 1936.

IN THIS book of general science, intended apparently for the student of upper high school or college level, a broad survey of all the important fields of scientific study is attempted with considerable success. The story of general science is told under three main headings: first, the earth and its inhabitants as the home of mankind; third, man's attempt to control his environment, including himself. The second group is a transitional one between the first and third groups. Group one amounts to a study of environment, under five main headings: the atmosphere, water on the earth, the earth's crust, the earth as a member of the solar system and life on the earth. In group two are included units on the substances of the earth and the control of natural forces. Out of these flow the topics in group three, which deals in separate units with control of heat, light, electricity, sound and electricity in communication, and in units on how we keep alive, living creatures as our friends or enemies, how we have learned to control our world, and the development of a scientific attitude.

The authors confess to an ambition to write a textbook which shall also be readable, and in this they have succeeded by virtue of the liberal use of familiar comparisons, good illustrations and a simple style of exposition. The organization of the units, which is excellent, does not interfere with the pleasure of reading the book but rather enhances it. As the reader starts each unit he is introduced to it by a brief summary of what he may expect to find therein, followed by a list of problems which the units will help in solving, then the text matter itself, and after that a primary list of activities recommended to the student (things to do) with a secondary list of "more things to do," then unit organizing activities, and lastly a bibliography, not so called but invitingly entitled, "You Will Want to Read Some of These." In content, organization and presentation, this is an excellent book and should be interesting, stimulating and useful to teachers and students.

W. W. BAUER, M.D.

A LIFETIME OF SAVING—THEN WHAT?

By Ara Weaver Brubaker. Paper. Price, $1. Pp. 56. Lancaster, Pa.: Science Press Printing Company, 1936.

THE author has examined the wills and court records in hundreds of estates. He has studied the causes of estate shrinkage and waste which result from the haphazard provisions left for settlement.

Estate conservation is influenced by (1) taxation (current income and death taxes); (2) fluctuations of values during the life of the person accumulating the estate; (3) the risk of loss as the result of old age, and (4) probate costs, resulting from successive alienations.

The author considers a proper form of trust will as one of the most valuable means to conserve an estate. A specimen trust will is given which provides for an optional duration of the trust, the use of the principal for the benefit of children, authority to invest and reinvest property as a trust fund and other clauses which the author believes are advisable to conserve the largest possible amount of an estate for the benefit of a testator's heirs.

The president of the American Bankers Association is quoted as saying, "Life insurance is the quickest way to create an estate for your family." It is stated that the life insurance institution of the United States represents more than 63 million men, women and children holding a total of some $21,000,000,000. During the last six years it is claimed that life insurance companies have paid to policy holders and beneficiaries about $17,000,000,000—which is more than the total debt of all European countries to the United States.

The author calls attention to the advantages of a life insurance will. Some of the advantages claimed for such an arrangement are: Property passes around and not through your estate—direct to your named beneficiary—thereby eliminating the probate costs, which usually amount to from 10 to 30 per cent. Six months or more is usually required to pass general property to beneficiaries under an ordinary will, whereas life insurance funds are paid immediately and in cash. There is no publicity connected with insurance, while your will and the inventories of your estate are spread on the public records. Wills are frequently contested, and your estate becomes subject to losses through expensive litigation; life insurance wills are not easily broken in a court of law. Certain additional tax advantages are available when part of your property is passed by life insurance, and in most states it is exempt from seizure by creditors, whereas property left by will is subject to all claims of creditors.

For those who are interested in estate planning and conservation, this publication offers some helpful suggestions. R. G. LELAND, M.D.

HEALTH AND GROWTH WORKBOOKS

By W. W. Charters, D. F. Smiley and Ruth M. Strang. Paper. Price, 28 cents each. New York: The Macmillan Company, 1936.

MORE and more does the health educator today demand to know some of the results of the teaching of health. No definite yardstick is at present available, and the teacher resorts to the "final exam" to determine the student's understanding of the topics covered during the term. These workbooks furnish an excellent medium by which the student can put to work the acquired knowledge after each lesson period. Charts which the students keep themselves are available, and these are an incentive to them to acquire the good health habits so desirable. The authors also use the modern aids in instruction through pictures. These illustrate proper and improper habits and procedures which the student is asked to classify as desirable and undesirable. Safety is also well handled in these workbooks. As the students progress the lessons naturally become more difficult. These books include excellent chapters on food and nutrition, minerals and vitamins as well as simple lessons on the various parts of the body, including a chapter on the glands of internal secretion. The six lessons and workbooks are decidedly worth while for today's school child.

P. A. TESCHNER, M.D.

SENSE AND SAFETY ON THE ROAD

By Robbins Battell Stoeckel, Mark Arthur May and Richard Shelton Kirby. Price, $1.50. Pp. 293. Illustrated. New York: D. Appleton-Century Company, 1936.

THE INCREASING number of adolescents who drive cars and the startling number of deaths and injuries due to automobile accidents should challenge the attention of all high school principals and faculties. When around 36,000 people lose their lives and a million are injured in automobile accidents it is time for our schools to do what they can to instruct children and youth. While our high schools may not be able to provide actual training in driving automobiles they can at least see that the pupils are adequately informed.

For such a purpose, "Sense and Safety on the Road" is to be heartily recommended. The authors, well prepared for their task, write in a pleasing style and are practical. They take up the problem of safety on the highway historically; they describe necessary safety features and consider the fitness of drivers and measures for the prevention of accidents. The authors reduce the principles of safe driving to twenty, stating only one of these rules negatively. That is the twentieth: "Never *drive after drinking intoxicating liquors.* To this rule there are no exceptions and no adjustments whatever. The driver of a motor car who violates this rule is a potential criminal."

The chapter on the "Personalities of Drivers" is especially interesting psychologically and might be used with profit in dealing with adolescents. For example, the basic craving for superiority over others sometimes leads people of social inferiority to derive great emotional satisfaction by overtaking and passing cars on the highway.

In classes in hygiene, social studies and English this book would be a valuable reference.

J. M. ANDRESS.

THE CIRCULATION OF BLOOD

By Winifred Parsons. Cloth. Price, $1.75. Pp. 204. Illustrated. New York: The Macmillan Company, 1934.

THIS IS one of a series of books on popular science written in nontechnical language by a scientific worker actively engaged in research in this field. The purpose of this book is to give the reader a simple, modern comprehension of the circulation of blood. The subject is presented in a clear expository manner and from a broad biologic point of view. Not only is circulation in man discussed, but the evolutionary beginning is coherently traced so that the reader may understand how this important function is correlated with the entire body development. The author's style is engaging and stimulating. The factual data are in keeping with the best scientific thought of today. The little book is a popular classic on the subject. It is vividly presented and copiously illustrated and is addressed to educated laymen. Students of biology and zoology will find the book of particular interest, but it commands a place in any general library.

H. G. PONCHER, M.D.

(Continued on page 666)

[NOTE.—Books reviewed or mentioned on this page, other than those published by the American Medical Association, should be ordered from booksellers or direct from the publishers. They may not be ordered through HYGEIA or the American Medical Association.]

nature's G-MEN

By GEORGE A. SKINNER

Part 5--FISH and REPTILES

These denizens of the damp spots and deserts protect mankind from unseen dangers

WHEN WE speak of fish, most of us have one of two visions: Either we think of how delicious they smell and taste when invitingly served at the dinner table, in camp or even taken from cans, or else we imagine the sport of capturing them in the mountain stream, in the inland lake or from the salt water. In either event they are regarded principally from the standpoint of food. But it is interesting to note that in their search for food, fish do much to assist us in the destruction of insect hordes that are such a menace to our food supply, safety and comfort. Scientists have estimated that fully 40 per cent of the food supply of fresh water fish is insect life, either fully mature or in one of its developmental stages. As with most of the lower animals the chief activities of fish are concerned in finding something to eat, and at the same time avoiding being eaten. Naturally one might expect the smaller fish to be the most proficient in capturing insects, and this corresponds with the facts in the case.

Many of the fresh water fish are exceedingly active in capturing insects that fly near the water, and we can see them jumping out of the water any summer evening if we happen to be on a lake shore. Sometimes this leaping appears to be due purely to exuberance of vitality; but usually it is for the purpose of capturing an unwary insect which is perhaps also in the search for food and has carelessly flown within

Century Photo

reach of a hungry and active fish. The action is so quick that it is often missed by the eye. A practical use is made of this knowledge by fishermen who substitute artificial insects concealing hooks and then tempt the fish to take this bait. They do not often jump for it, but occasionally a fish will appear so eager to reach the supposed tempting morsel of food that he will not wait for it to reach the water before he seizes it. As the major portion of small fish that are mostly supported by insects serve as food for larger fish, insects are then an important direct or indirect source of food for all fish. At the same time the fish serve us in removing these pests.

One of the principal scourges of the human family, particularly in the tropics and in the warmer parts of temperate regions, is malaria. We have learned that malaria is conveyed to man through certain varieties of mosquitoes. Also we have discovered that if we are to control mosquitoes at all adequately, it must be done while they are in the larval stage. This has been accomplished by a number of means, such as oiling, poisoning with arsenic powder and swamp drainage. There are, however, some places where none of these means is always effective, and others where they cannot well be used. In such places we can call to our aid a tiny fish commonly known as a top minnow but with a scientific name out of all proportion to its size—Gambusia affinis. For its size this little fish supports a most amazing appetite, and apparently it never gets enough to eat for it will eat its weight in mosquito larvae every two days, if it can get them. It is very active and expends a tremendous amount of energy in its search for food. This is fortunate for us, as the minnow is particularly fond of mosquito larvae, or wigglers; and since its mouth is in proportion to its appetite, wigglers have little opportunity to escape this energetic little swimmer. It is particularly valuable in pools which are more or less full of aquatic growths, as these offer good protection to the larvae from oil or poisons but almost no protection from the sharp eyes and persistent appetite of our little gambusia.

These fish are now bred in great numbers and are one of the important means of preventing the development of disease-bearing mosquitoes. If ornamental ponds are so arranged that they have either shallow places or vegetation for the minnows' protection, there is little danger of larger fish catching them. Sometimes gambusia will eat very young goldfish, and these should be kept out of its way until they are too large to be eaten. There is no reliable evidence that it destroys goldfish eggs. It breeds rapidly and seems to be hardy under average conditions. These top water minnows are equally efficient against the mosquito pest whether or not it is of the disease-bearing variety, for in many localities where malaria does not exist the mosquitoes are most troublesome and irritating. Often they are so numerous that outdoor life both in the city and in the country is nearly impossible after dark.

Garden pools if left unprotected are prolific sources of mosquito breeding. We can keep such pools practically free from mosquitoes by placing some of these little fish in them. They are not only useful but very entertaining and they may now be obtained from many of the state fish hatcheries. Other fish are also used in this manner, but at present these seem to be the champions in the field of mosquito larvae catching.

It is unfortunate that most persons regard all snakes with dread and assume that simply because a snake is a snake it should be immediately destroyed. This attitude has been so widespread that many of the most valuable snake breeds have been almost exterminated. As the food of the larger snakes is mostly composed of rodents, and the little ones eat such insects as grasshoppers, crickets and the like, we have deprived ourselves of one source of valuable protection in the fight against these pests. The poisonous snakes are excluded from this discussion for we wish to consider only those which are harmless to the human family and which would gladly keep out of our way if allowed to live normally. Recently the daily paper carried a story of a man who was relining a well, and although he worked diligently he failed to finish in the time limit set. His excuse was that he had to stop so often to kill the snakes which were hibernating around the well that his work was much interfered with. The report stated that he had killed over a hundred snakes. This illustrates the general attitude toward these usually misunderstood reptiles and their value among nature's G-men. It is fortunate that instruction is now available for our youth in schools through nature studies and literature and that we are beginning to learn something of the value of reptiles in the scheme of nature's balance.

Any large snake is immediately assumed to be dangerous by most persons. But this is not necessarily true; in fact it usually is entirely wrong, for many of the large snakes are entirely harmless and, if allowed to live, will many times repay our care. In the Philippine Islands this has long been recognized, and the large rat-catching snakes are almost as common in the attics of the larger houses there as are house cats here. These snakes are often not even seen, but they may be heard almost any time at night when all is quiet. It was a matter of intense interest to me years ago when on duty in the central part of the Island of Luzon

to lie on my bunk at night and listen to rats running around in the attic above. Then would follow a soft rustling sound, and almost invariably after it would come the squeal of a rat that had fallen victim to this quiet hunter. They do not kill all the rats, but it is hard to estimate how many more of them there would be if these snakes were destroyed. The natives protect them, as they know their value.

MANY other reptiles besides snakes are almost entirely supported by their ability to capture insects for food, and among these, lizards rank high. These reptiles exist in almost every part of the globe, and most of them are very agile, and this makes the observation of their pursuit and capture of insects most interesting. The Philippine Islands have a large number of lizards, and one small variety, almost transparent, was of much amusement to us in the early days of the American occupation. As we were stationed far out in the interior, the time often dragged heavily when the day's work was done, as reading matter was scarce or wanting; light came only from candles, and even if there had been amusements in the little towns, it would have been exceedingly dangerous to leave the shelter of the garrison at night unless under a heavy guard. Under such circumstances rather trivial events may attract interest, and it was not long until we learned to watch these little chameleon-like reptiles that were plentiful around our quarters and relatively tame. One of the principal nightly sports was to lie on a cot and watch the ceiling over the dim and smoky candle lanterns that attracted many insects. Soon we would see the lizards rapidly approach from many directions, until they came within range of the insects attracted by the light. Then slowly stalking them, their procedure consisted of a short run, only to remain motionless until the insect evidently lost interest in them, again a quick approach and, when in reach of a rather long tongue, a quick flash and the insect was gone. They rarely failed to get their bug, and such lizards were a great help in keeping down the myriads of insects of the tropics. But their activities are not confined to hot countries, for we find some forms all through rural areas.

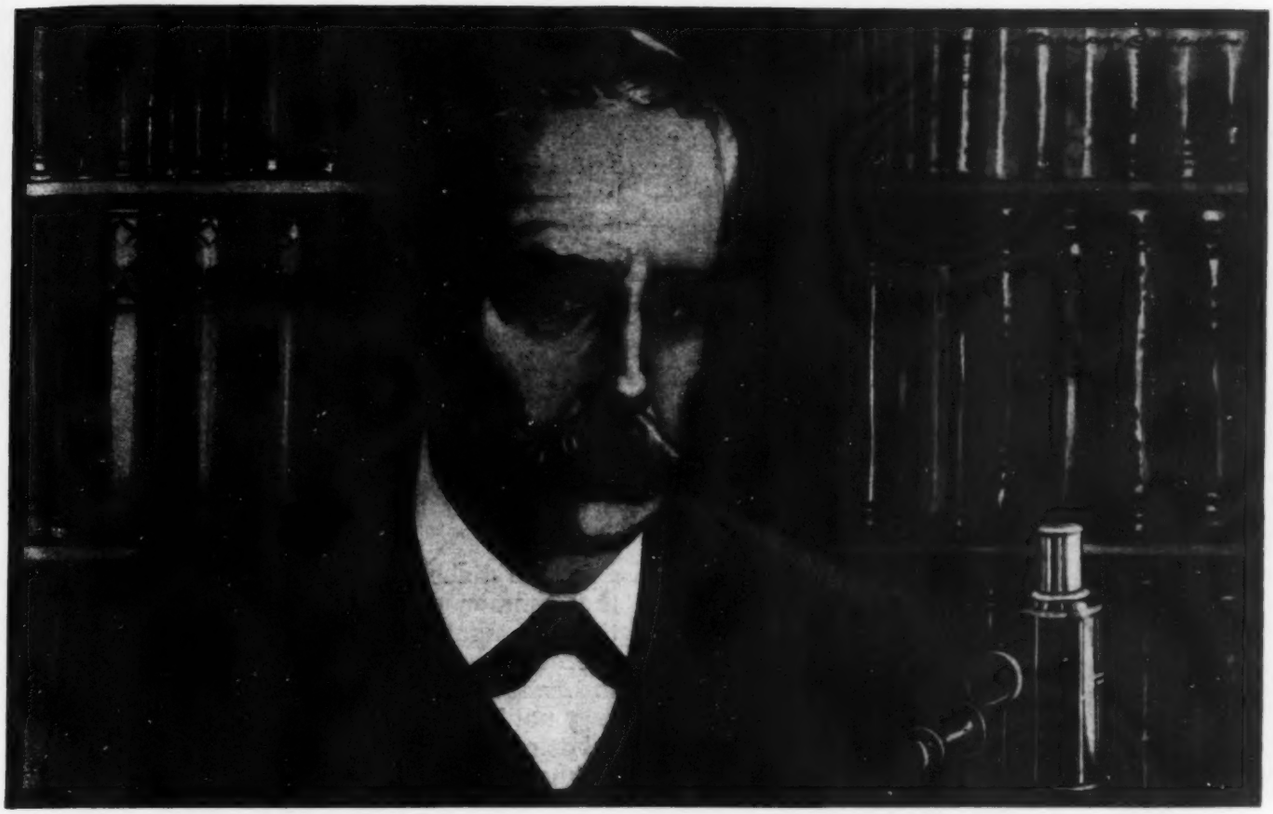
Toads are not attractive to look at, and they have had a somewhat unsavory reputation in the past for their supposed association with witches and wicked spirits. But we have learned to recognize their virtues, and any gardener now welcomes them to his garden and encourages them to bring in the whole family. Where toads are plentiful, destructive insects and worms have a hard time for while toads seem to be inactive, their eyes are quick and their tongues quicker. If any insect comes within range of this long and accurate tongue, his life story is finished right then.

Toads do not produce warts on the hands, as was formerly thought, and they may be handled with safety. They are not very intelligent, but they may become accustomed to people, so that they appear to lose fear of them, especially if fed a few times. Every encouragement should be given them to take up their residences in our gardens.

Frogs are also energetic insect catchers from early tadpole stage on to complete development. They have a rather hard time in the struggle to live, for they are constantly sought for food by many wading birds, hawks, snakes and fish. But those that do survive serve us well. Man himself has not scorned frogs as food, for most persons know how delicious frog legs are when of proper size and preparation. Now that the larger varieties are cultivated for food it may be that the smaller ones ordinarily inhabiting wet places will be less disturbed by man.

In our consideration of the different life forces that are assisting us to live among so many adverse conditions, one thing must be apparent. Our greatest menace is insect life. Man is said to rule the earth, but his closest competitors are the myriads of insects that thrive in every part of the globe. Scientists have now classified approximately a million species of insects, and man must compete with and combat most of them single handed. Insects have had something like 40 million years' start on man in preparation for existence here and to establish forms adapted for survival. They have become so adaptable to changing conditions that only a short time is necessary for them to readjust to any new environment. Insects that are perfectly harmless today may by a slight change in the balance of nature become a serious menace to the human family.

FORTUNATELY not all insects are harmful, or man would have no chance at all. It has been pointed out how they act in the control of each other, and often they not only are destructive to other forms of insect life but are cannibalistic. Only the most vigorous of some species will be found in one place, because he has eaten up all his relatives. Many plants and trees are almost entirely dependent on insects for the continuation of their species, as without these helpers pollenization would not take place. We have seen that fish life is largely dependent on insects for food and that many birds derive the greater part of their sustenance from insects. Man himself has frequently used this source of food, and there are still many groups of people who eat various larval forms, eggs and often mature insects. In the early efforts to cultivate silkworms in the Philippines everything went along fine, but perfectly good, husky worms kept disappearing. A watch was finally kept to see what was destroying them, and it was found that the native *(Continued on page 645)*



JULIUS WAGNER-JAUREGG

(1857-)

Conqueror of Dementia Paralytica

By ADOLPH BEILIN

AS A PIONEER in the new treatment of syphilitic paralysis, or paresis by inoculation with malaria, Wagner-Jauregg received the Nobel award in 1927. Today the application of his method of treatment or modifications thereof is practically worldwide.

Wagner-Jauregg was born at Wels, Upper Austria, in 1857. Soon after his appointment to the position of assistant in the great psychiatric clinic in Vienna in 1887, he began an investigation of cases of general paresis in which spontaneous recovery had occurred. In a large majority of these cases he found that some intercurrent febrile infection had brought about the improvement or cure. This observation led him to the induction of artificial fevers in the treatment of advanced cases of dementia paralytica. He found that the administration of small amounts of tuberculin resulted in temporary improvements in some cases.

These experiments proved sufficiently successful to prompt him to use typhoid vaccine intravenously in a group of hopeless cases of paresis. In view of the usually fatal prognosis in a paretic case he felt entirely justified in transmitting a second serious disease. But the benefits thus derived were never sufficiently striking or permanent, and he abandoned these experiments for a number of years. An added reason for his postponement of the fever treatments was due to the discovery in 1905 of arsphenamine, or "606," which, he felt, completely eclipsed his own therapeutic methods.

Meanwhile Wagner-Jauregg became privatdocent and finally professor in the University of Vienna. His practice grew along with his reputation as a sympathetic and skilled physician. He conducted various clinical and anatomic researches.

FOR many years prior to the World War, malaria was unknown in Austria; it was brought back by soldiers returning from Italy and the Eastern front. The further development of the fever treatment of paresis came as a result of the many fresh cases of malaria which occupied Wagner-Jauregg's professional attention and for which an effective remedy was at hand. So

in 1917 he inoculated nine hopeless paretic patients with tertian malaria, allowed them to have a series of severe chills and then administered quinine. The result of this multiple experiment was unprecedented. The health of six of them was greatly improved, and the remainder were cured. The cured patients returned to their families and to work.

WAGNER-JAUREGG'S records show that he rescued many hundreds of the victims of dementia paralytica from incurable insanity and certain death. The clouds which had obscured their reason were completely dispelled, and they were restored to absolute sanity. The fever which the germs of malaria induced in their blood cured them of their terrible mental maladies. Not since the pioneer work of Pasteur and Koch has so great an advance in medical science been achieved. Wagner-Jauregg may justly be called the father of "friendly fever." He has tamed man's ancient enemy and made it his servant, and he has lived to find himself honored by the medical world.

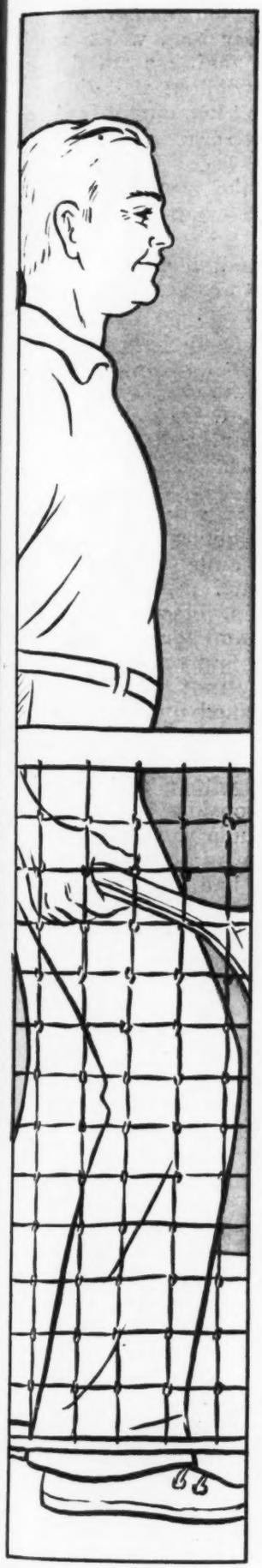
PERSPIRATION (Continued from page 622)

The sweat and urine both come from the blood. They have the same constituents, the chief one of each being water. The other constituents appear in the urine in much greater amounts than in the sweat. Whereas the chief function of the sweat is heat regulation of the body, the chief function of the urine is the excretion of liquid and soluble waste matter. Under normal activity equal amounts of water may be eliminated by the sweat glands and the kidneys. Under certain conditions, as in kidney disease, the sweat glands eliminate increased amounts of the liquid and soluble wastes that normally are excreted in the urine, but they cannot compare in such function with the kidneys. Within narrow limits the sweat glands can compensate for the kidneys, and vice versa, but when these limits are reached neither can compensate for the other. A person cannot live if both kidneys are destroyed by disease, nor can he live if the body surface is burned so badly as to destroy the greater portion of the sweat glands. A person, however, can live with one kidney or following destruction of one-half the sweat glands; that is, following a severe burn of one-half the skin area. If one kidney is thrown out of function the other kidney will gradually increase in size to compensate for the missing one, but the same is not true of the sweat glands when a portion of their number is destroyed by a burn of the skin area.

The more copious the sweat, the less the quantity of the urine. That is due to the amount of water eliminated in the sweat. The smaller the amount of urine eliminated over a given time, the more concentrated it is and the more color it has; whereas, urine excreted in profuse amounts has little or no color. The ammoniac odor of urine is due to its content of urea; it decomposes to form ammonia. Likewise, when sweat has a urinary odor it means that it contains an increased amount of urea. In kidney disease the sweat may contain so much urea that it forms a white crystalline deposit on the skin. In diabetes mellitus, sugar in the urine is the common determining factor. At the same time a small amount of sugar is regularly excreted in the sweat. The general belief that the sweat is sweet or sticky in diabetes may or may not be true, depending on the case.

History records several epidemics of sweating sickness. The most severe ones, known as the English Sweat, appeared in 1485, 1507, 1517, 1528 and 1551. All these epidemics were confined chiefly to England except the fourth one in 1528, which also ravaged northern and eastern Europe. The English Sweat was a specific infective disease and was manifested by a chill, giddiness, headache and severe pains of the neck, shoulders and limbs, with great prostration, fever and profuse sweating. As a rule, it attacked robust, vigorous persons, came on suddenly and was fatal, usually killing within twenty-four hours or less. Persons who withstood it longer than twenty-four hours usually recovered. Nothing exactly like this illness has been known since 1551. It is recorded that "scarce one amongst an hundred that sickened did escape with his life." Dr. Hans Zinsser in his recent book, "Rats, Lice and History," states that if it were to reappear now it could not be classified with any of the known infectious diseases.

EARLY in the eighteenth century another sweating sickness appeared in Europe. It appeared in epidemic form in Picardy (now a part of France) in 1718 and became known as the Picardy Sweat. It was also a specific communicable disease and was manifested by fever, profuse sweating and an eruption of vesicles over the body. It was milder than the English Sweat and seldom ended fatally. Many epidemics of it have appeared in France since 1718. It has also appeared in southern Germany and in Italy. It still occurs at irregular intervals and is known as miliary fever. It does not occur in the United States.



TENNIS

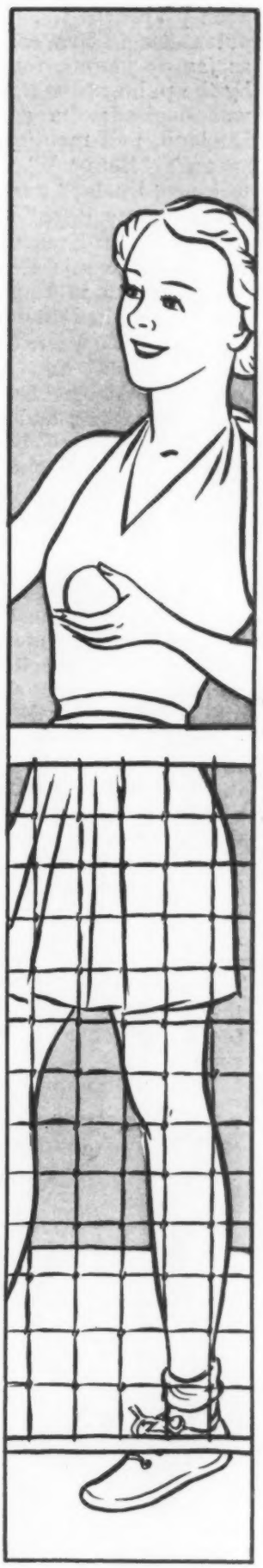
FOR ANY AGE

It can be competitive before 40, but let it be just for fun after 40, advises

DUDLEY B. REED

A GRAND GAME is tennis, for it meets practically all the requirements for a sport to be continued into adult life after college. Usually played outdoors, it requires but few participants, is widely available, can be considerably modified in severity of effort and doesn't take much time. Besides this, it is fun and has the physiologic and psychologic elements which tend to make all the games played with a moving ball interesting and stimulating. Among these elements are judgment of distance and the speed of the ball; stance or position of the player's body with relation to the ground and the net; foot work and position of the body with relation to the moving ball; timing as to the place and time at which the racket shall meet the ball; form, rhythm and follow through in the actual stroke; maintenance of the proper position on the court while attempting to draw an opponent out of position; diagnosis of weaknesses of opponents; anticipation of what the man on the opposite side of the net will do, and the ability to cover up your own intentions. These factors of adaptation to what an opponent does, anticipating what he is about to do and striking a moving ball which may vary greatly in speed and spin, are the principal reasons why moving ball games have a certain superiority over stationary ball games like golf and billiards.

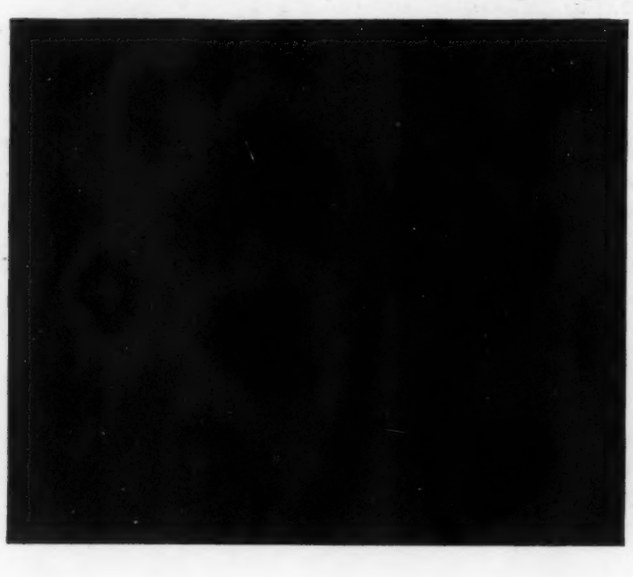
Historically, tennis as we know it was originally called lawn tennis to distinguish it from court tennis, a game played in a court of somewhat weird construction and so involved and complicated that it is said to require about three years of fairly concentrated and continuous study for a man of average intelligence to learn how to score it. The playing of it is a sort of lifetime job, like pelota or a Supreme Court justiceship. Therefore no consideration of it will be attempted here, though with no aspersion on either reader or author as to his ability to comprehend it. It's merely a matter of time. The parent game of tennis, like golf, seems to belong to the ancient and honorable, having



been played in the middle ages by kings and potentates in France. It was known by them as *jeu de paume,* for the ball was then struck by the palm of the hand. Soon a sort of racket was devised; the game was introduced into England, and mention of it is made in Shakespeare's "Henry V" when Henry asks, "What treasure, Uncle?" and receives the reply, "Tennis balls, my liege," with regard to the nature of a gift from France.

In 1874, tennis had assumed somewhat its present form in England and was introduced into the United States, and the United States Lawn Tennis Association was formed in 1881.

So much for the known history of the game. It is interesting and perhaps not entirely idle to project oneself back somewhat further on wings of imagination, back beyond Charlemagne and the Crusades, beyond Jehu and Jezebel, beyond Tut-Ankhamen and his forebears, to the time of primitive man, Neanderthal, Pekin, or what you will, and his primitive sons. Beyond doubt this early man used stones and clubs as weapons, and it must have been important that he throw the former far and accurately and that he wield the latter with strength, quickness and finesse. In the absence of child labor legislation the boys, when very young, must have begun to throw smaller stones and to swing juvenile clubs. There would have been contests in stone throwing both for distance and for marksmanship, and it is scarcely conceivable that these boys would not soon have tried out an activity consisting of the throwing of a stone by one boy at another and the latter's attempting to ward it off by striking it with a club. Probably the boy with the bat would try presently to hit the stone back toward his opponent as far as possible and would discover that a stone wasn't very resilient and would feel that even a Ruth or a Gehrig couldn't hit such a thing over the fence. He would therefore take the matter up with the big league pundits and the commissioner, and they would vote in favor of a livelier ball, which would be made, perchance, by taking a small stone or piece of wood and winding it with plant fibers. Since this wouldn't last long it is almost certain that, in the next season, both leagues would adopt a ball with a cover of skin and, presto, there you have the first baseball, not cork centered, to be sure, but a fairly good ball.



It must be admitted that there is a certain flavor of fancy to the foregoing observations which removes them a bit from the realm of history in the accepted sense; but there is some real evidence of their probable truth apart from logical thinking, such as the existence of sports with a ball and a bat, a racket or similar implement among different and widely separated peoples at the time when their known history begins.

In this country, tennis was taken up by society in the "Gay Nineties" or somewhat before with the emphasis quite largely on ancestry, costume and etiquette. Newport was the tennis capital. For men, blazers and white trousers were *de rigeur* and for women outfits which must be seen to be appreciated and could be described by no mere man. But the game was too good to be crushed under the superimposed burdens of clothes and manners, and it was taken up to a considerable extent by the general populace, albeit with a certain odium which made "he-men" consider it a somewhat "sissy" sport. This attitude was due partly to the fact that the game was played by women in a day when that sex had not become sport conscious and the mothers of "nice girls" would not approve generally of daughters who became hoydenish and ran around actively with the chance of exposing an ankle. For these reasons and perhaps others it was not unusual in 1894 to hear it remarked that tennis was but a fad and would not be played at all in a few years. In spite of these prophets, if today you ask a hundred thousand college students of both sexes to name the sports which they enjoy, more will mention tennis than any other sport with the possible exception of swimming.

This is not the place for a discussion of the technic of tennis. There are good books which embody the suggestions of experts on that subject, and some of these are mentioned at the end of this article. It should not be amiss, however, to venture some general comments about the game. In the first place, in spite of the hasty opinions of the he-men of the nineties, let no one convince you that match or tournament singles is anything but a highly strenuous and exhausting game, a game for young, strong, sound persons and for them only. In tournament play a man may be required to play two five-set matches in a day, extending perhaps

over four hours or more, of which half or nearly half are spent in extremely vigorous, often maximum, effort. This may be compared with football, popularly thought of as one of our most vigorous sports but in reality one in which an average of but ten minutes of a sixty minute game are used in actual play, the remaining fifty minutes being occupied with signals, resuming formations and other preparations which are rest periods. Football training is more severe physically than participation in the games themselves, and one of the most exhausting parts of such training is "wind sprints": starting, running at top speed for a short distance, then stopping and repeating, for the human body, like the automobile, uses more gas in getting under way than in keeping under way. Match tennis involves a long succession of these short, top speed sprints. Therefore it must be regarded as making exacting demands on the muscular and circulatory systems.

And what of the nervous strain? What of courage and moral stamina? Football requires courage, physical and moral, and football entails nervous strain particularly before the game when there is much publicity and often much importance attached to the contest. Most football players will tell you, however, that when the game has started they pay little attention to the crowd and that the nervous strain ceases after the first play. But certainly the man who lacks physical courage will not tackle hard, will slow up before being tackled and will not gain the extra yard or so which might be the reward of fearless drive at the critical moments. In football or any other team game the sense of responsibility, and therefore something of the strain, is shared. If one man running interference is unskilful or slow, others may be superlative, and so the play is still successful. If the center misses a tackle, the defensive halfback may have come in fast and limited the gain to a minimum. And after the game is over and, it may be, lost, any player may feel that if the rest had done as well as usual it would have been won. It may often seem that Lady Luck plays a part in some games. The ball squirts out of the arms of a back and right into the arms of an opposing end who is running at full speed with none to say him nay—and it's a touchdown.

Now consider the man playing in an important tennis match before a crowd. He has not a single teammate to give him aid and comfort. Even luck is an entirely negligible factor. Across the net from him is a man as well equipped as he is in skill, strength and endurance and as anxious as he is to win. It becomes a question of heart—physical and moral heart. If he loses, he cannot, in honesty, blame any human being but himself. The audience is close and is looking at but two players. It will see each move he makes, each failure to get into position, each faultily executed shot, each double fault, every sin of omission and commission.

In football there may be five or ten or, if you will, fifty critical situations in a game. In match tennis practically every point is a crisis, for any one who has watched much competitive tennis has seen a man, leading five games to two and 40-15 in the deciding set, lose a hard fought point, then the game and then lose heart, set and match. In a five-set match there are 120 points, if one player wins them all, but ordinarily two or perhaps five times that many, which makes 600 crises extending over two hours. Surely the sport requires moral stamina to a high degree and imposes a severe nervous strain, a strain which is illustrated many times in team competition by a player whose game goes quite to pieces in such a singles match but who starts a doubles match almost immediately afterward with one teammate to help him and plays with confidence, skill and success.

A sport like this, requiring prolonged, severe physical exertion and nervous tension, is not for men more than 40 years old.

Competitive doubles, although not as vigorous physically as singles and much less of a nervous strain, is nevertheless a rather hard game largely because of the insistent presence of the pestiferous lob. The frequent rushing to the net at high speed and then dashing back to cover a well placed lob, and the repeated demands for hard, overhead smashes make for plenty of physical activity and muscular exertion.

Then why, says some unbelieving pagan, bring up this game of tennis at all in a discussion of exercise for adults only to say that it is too strenuous for a large portion of them? Patience, brother, patience. The answer is obvious—tennis doesn't have to be played that way. Com-

petitive tennis for cups and championships and the precarious living achieved by the leading amateurs is one thing. Recreative tennis played for fun by a group of business or professional men who "sip no sup and who crave no crumb" of prizes, athletic adulation or prominence on the sports pages is quite another thing. If you are to play tennis in this fashion, your attitude must be right; it may need adjustment. If you were a good tennis player in your youth and still cherish certain cups to show your sons, you should admit frankly that you were a fine tennis player with your share of victories, that there are probably a lot of men now playing competitive tennis whom you could beat with one hand tied behind your back, but that those days are gone forever. If you never won any gonfalons, whatever they are, in this sport or if you have taken it up recently, make up your mind to let Vines and Perry have their laurels as far as you are concerned. It is extremely improbable that you can now be a front rank tennis player even if you want to, and you don't want to.

Furthermore, you know perfectly well that those who would be first class performers on the violin, the sackbut or the tennis court must begin young and practically devote themselves to the job. As Leopold Auer, the famous producer of violin virtuosi, told a young friend of mine: "You have exceptional talent. You can probably be a concert violinist, but you will have to give up school, give up athletics, give up everything, and practice—practice six hours a day including Sundays."

Your attitude toward the thing must be the nonprofessional one which concedes that selling insurance or manufacturing toilet goods is your main occupation in life but that you'll probably sell more insurance and make better toilet goods or at least be happier in doing the same amount of business if you play tennis now and again. At any rate, you'll have a lot of fun.

SHOULD you try to win? Absolutely. But you should try to win by craft and finesse, by sizing up your opponents' weaknesses, by making them give you easy chances instead of trying to make impossible shots and to cover the entire visible territory. You should choose your adversaries from those who are in your class and have the same attitude toward the game. It should be agreed that you will stop well within the limits of your powers; and when any one of the players feels that he has had about enough, a deaf ear should be turned toward suggestions for one more set or gibes to the effect that you are going back. As a matter of fact you are going back, have gone back, and you might as well do it gracefully and safely. The one thing you should not do is to let a temporary ebullition of youthful spirits take command of your middle-aged judgment and drive middle-aged muscles and heart and arteries beyond comfortable performance. Be more proud of your sanity than of your endurance.

Playing with this attitude and having been assured by your physician that you are physically sound and may exercise, you can play doubles and moderate singles, perhaps two or possibly three sets, if they are not long, during the fifth decade of your earthly sojourn. During the next decade make it moderate doubles, and when you reach your sixtieth birthday turn your racket over to some boy who can't afford one and your thoughts to other pastures, perhaps as green and certainly less beset with pitfalls. And this seemingly unambitious program may leave you still some of the most interesting aspects of the game. One of the most fascinating things these eyes have ever seen in fifty years of watching tennis is the racket work of George Lott at the net in doubles. Those deft drop shots and sharply turned volleys, played with uncanny insight into what will be difficult for opponents to handle, can be emulated and practiced with a minimum of physical effort and a maximum of satisfaction. The strategy of the game may be worked out and used with lively interest by one whose muscles do not respond as they did at 18.

SOME points in strategy may be worth recalling here as we pass by shot making with but three fundamental observations. First, foot work is vital. If possible, all shots should be made while standing still, not running. This, of course, involves anticipation so as to be at the right place at the right time. The feet should be well apart to permit secure balance, rhythmic and easy swing and a good follow through, essentials in all games in which a ball is struck, including games with a stationary ball such as golf and billiards as well as baseball, tennis, squash and other moving ball games. Second, for all ground strokes the side should be toward the net, a position which permits the body to shift in the direction of the ball's flight, thus making possible balance, rhythm and follow through. Third, in all games in which a ball is struck, it is essential to look at said ball. As big league ball players have observed so sapiently with regard to certain pitchers, "You can't hit 'em when you can't see 'em." It is equally true that you can't hit 'em when you won't look at 'em. Big Bill Tilden, whose comments on tennis have been so well worth attention for so many years, has often stated in print that a player should watch the ball until it strikes the racket, or very nearly so. Many fairly good players as well as most dubs fail to do this, as you will probably observe if you pay careful attention to your own habits.

[NOTE.—In the August issue, Dr. Reed will conclude his discussion with a consideration of strategy in singles and doubles.]

NATURE'S G-MEN (Continued from page 638)

boys had discovered how succulent and attractive they were and were eating them in large numbers. Locusts are used in vast quantities for food in many localities.

Certain flies are of value in destroying carrion, and ants are famous in the tropics for the speed with which they will clean bones of every trace of organic matter. It is therefore apparent that many insects are exceedingly useful, and it is up to us to learn about our bugs, so that we may be able to distinguish between the helpful and the harmful. It is those that convey diseases and those that destroy our food supplies which we must keep down.

It must also be perfectly apparent that on account of the fecundity of insects, it is next to impossible to destroy completely any variety. We can greatly reduce its numbers and effectiveness by observing nature's method of maintaining a balance, and by the utilization of nature's own G-men. We can do even more than this by a proper knowledge of the habits of insects, and destructive methods are well developed along some lines, while new ones are being added as more knowledge is gained. One of the recent methods of insect control is the utilization of a knowledge of the effects on them of lights of different colors as a source of attraction to traps. It has been found that they are highly sensitive to light and that while a white light will attract many, lights of specific color will unerringly attract certain varieties, while others will entirely ignore it. With this as a background, electric traps are installed around such lights, and the variety which is particularly undesirable in a given locality or on a given crop may be much reduced by electrocution. There is still much to be learned about this and other methods of control, but scientists are constantly at work to improve methods. Nearly every large institution of learning now has a department of entomology, and the United States government maintains a large force of men in laboratory and field, as do most states, to combat the insect menace.

Nature's G-men are all about us. They can do much more than they are doing if given the proper encouragement and direction. We must learn to live with insects, since there is no chance of entirely removing the harmful varieties, and it would be fatal to destroy others. To maintain control and leadership, we must make full use of every successful method of combating them.

[The End]

HEALTHGRAMS ✣ from Articles in This Issue

¶With intelligent supervision of the small child's daily routine the summer, more than any other season of the year, offers opportunities for freedom and development, but in no other season are there so many dangers resulting from improper care. *See page 597*

¶The world does not long remember its tragedies. *See page 584*

¶Today, teachers who are taking their cues from mental hygiene are less concerned with the actual mischief or even the delinquency of boys and girls and more with the reason why such undesirable acts are committed. *See page 653*

¶The first safety requisite for a camping trip is a snakebite kit, for it is fully as necessary as your gun and far more likely to save you from actual physical danger. *See page 610*

¶A headache is not a disease in itself; it is only a sign and a symptom of a disease somewhere in the body. *See page 606*

¶Coronary occlusion is a grave but not a hopeless disease, if the condition is promptly recognized and proper treatment is at once instituted. *See page 608*

¶It is a sound biologic law that states that mental capacities grow as we become more adept in the use of our hands. *See page 628*

¶While blindness stirs the emotions and arouses popular interest and support, most appeals for safeguarding sight fall on unresponding ears. *See page 585*

¶There is no more dangerous state in which to indulge than that of self pity, for it means a loss of grip, a surrender, an admission that one has become obsessed by one's own confession of weakness. *See page 604*

¶Seasickness is not a specific disease with a specific cause but a shock resulting from an abnormal stimulus or a combination of abnormal stimuli which are directly or indirectly the result of going to sea. *See page 593*

LET'S HAVE PINEAPPLE!

By E. M. GERAGHTY

WITH THE coming of summer the housewife faces the oft recurrent question, "What can I serve that is especially tempting and not too expensive?" The answer is "pineapple." Pineapple is good every month in the year, but it certainly is "tops" in the spring and summer. At the time when our gardens are gay with color and heady with fragrance, how well the clear fresh color and delicious aroma of pineapple mingle to make our meals perfect symphonies.

You may be interested to know that there is real romance attached to the name of this luscious fruit. The aboriginal Indians knew it as *Na-Na,* meaning fragrance-fragrance. Spanish explorers called it *pina* because of its resemblance to the cone of the pine tree.

Peter Martyr's statement that Christopher Columbus and his companions saw this fruit at Guadeloupe in 1493 is undoubtedly the first written mention of pineapple. The first picture of it is taken from the "Universal History of India" (referring to the New World), written by Father Aviedo and published in Seville in 1535.

In 1555 a Protestant minister preaching on the American continent described the pineapple as "a fruit worthy of the gods and of such excellence that it should be picked only by the hands of Venus."

And a few years later this was written: "The fruit of which the natives of America make greatest medicinal use is called Nana. It is as large as an ordinary gourd and has the shape of a fir cone. . . . This fruit should be allowed to mature, when it is wonderfully fine, as much on account of its fragrance as for its flavor which is as delectable as fine sugar, and even more so. . . ."

Evelyn in his "Diary" mentions that pineapple was served for the first time in England at the banquet given for the French ambassador in 1668. "Standing by his Majesty at dinner in the Presence," he wrote, "there was that rare fruit called the King Pine growing in the Barbados and the West Indies, the first of them I had seen. His Majesty having cut it up, was pleased to give me a piece off his own plate to taste of."

Literature does not state one definite origin of the plant. It is said to be a native of tropical America, probably Brazil, although some was found early in the West Indies. Today we get pineapple from several tropical countries, but most of it comes from Hawaii.

The time of the first appearance of pineapple in the Hawaiian Islands is unknown, but it was prior to 1813. The soil there has always been excellent for the growth of this product, and even the wild pineapple grew luxuriantly. However, the texture remained woody, and the flavor was acid. So, slips of many varieties were imported and tried out. Smooth cayenne seemed to please the growers most, and today this is the variety most widely grown commercially in the Hawaiian Islands.

On your first visit to the pineapple plantations you will marvel at the tens of thousands of sunlit acres stretching across to the horizon —luxuriant pineapple plants and no weeds, not even dandelions. The rich red earth which produces such gorgeous fruit certainly would

produce weeds, so how can these pineapple gardens be kept so free? The answer is found in the use of mulch paper, just as you and I use peat moss in our tiny plots. This mulch paper is laid out in long even rows by a machine. Not only does the paper keep the weeds out, but it keeps the needed moisture in and protects the roots of the plants from the scorching rays of the tropic sun.

After the paper is laid in long rows, a worker scatters crowns, slips or shoots of pineapple along the line of the rows. Then a planter follows and cuts a hole through the paper and sticks a plant through the hole into the ground.

While there is some iron in the soil, it seems difficult to utilize it for the plant growth; so, after the plants have reached a lusty growth, they are sprayed with a solution of iron.

It takes from eighteen to twenty-two months for the plants to reach the fruiting stage. At the first fruiting each plant bears one fruit; this is called the plant crop. The original stalk can fruit no more; but the plant puts out shoots, all but two of which are cut off. Each of these bears a fruit the next year; this is called the first ratoon. The process is repeated for the second ratoon, and then the fields are plowed under and left unused for two years.

When the fruit is ready to pick, trained workers go through the fields testing each pineapple to see whether it has reached the exact degree of ripeness for shipping or canning. The fruit which is to be shipped away as fresh pineapple must be picked before maturity, or it will not bear transport and keep satisfactorily.

When you are buying fresh pineapple keep these points in mind: If you wish to use the fruit right away, select pineapple that is a uniform deep yellow color, smooth surfaced and slightly softened. You may test the ripeness of each fruit by pulling leaves from the crown or top. If the fruit is fully ripe the leaf will come out easily and its base will be white for about two inches. When you wish to keep the fruit for several days select those less ripe, as the fruit softens and yellows easily at room temperature.

It is an excellent plan to keep a few on hand ripening at home. You will always have one ready for the hurry-up dessert or a perfect end to a leisurely summer dinner.

The ripe pineapples are picked and carried to the roadside where other workers cut off the tops, grade them by size and pack them into crates. Then they are taken to the cannery by truck, train or boat.

When we reach the canning plant, we find an immaculate place with white clad, rubber gloved workers happily engaged in preparing the pineapple for us to use.

Do you wonder how the pineapples are peeled? You recall the prickly process this is in your own kitchen, so you may be interested to see the amazing machine which cuts off the ends of the fruit, peels it to fit the cans and cuts out the core, all this being done at the rate of 100 pineapples a minute! The prepared fruit is then carried into the main part of the cannery.

As the belt conveyer comes along with its load of pineapple each pile of fruit is carefully inspected, and any pieces of outside shell are trimmed off. The pineapple is then sliced, selected by grade and put into the cans. The cans are filled with syrup, and the air is exhausted from them; they are then sealed, sterilized, cooled and stored. All this has happened in less than one-half hour.

So much for the preparation of the canned fruit and the juice. Keep a good stock of both on hand to use for a perfect note in summer menus. Serve dainty glasses of juice with paper thin sand tarts or sugar wafers when friends drop in to rest on the terrace on flower-scented summer evenings. Here is an attractive way to garnish this beverage: Cut a slice of lemon one-eighth inch thick; cut a hole in the center with shears; set a maraschino cherry in this center cavity, and stick a tiny sprig of mint in the top of the cherry. Float this gay bit on the ice cubes in your beverage. You'll like it!

And here are some ways my friends like pineapple:

★

Pineapple Nectar

2 eggs
1 cupful milk
2 tablespoonfuls sugar
1 cupful pineapple juice
Whipped cream
Nutmeg

Beat eggs until smooth. Add milk and sugar. Add pineapple juice. Top with whipped cream and nutmeg.

★

Holiday Cocktail

2 cupfuls cranberries
2 cupfuls water
3 cloves
1 cupful pineapple juice
½ cupful sugar
1 tablespoonful lemon juice
Sprigs of mint or green cherries

Cook cranberries in water with the cloves about ten minutes. Strain through a sieve lined with wet cheesecloth. Add sugar, and cook over low heat until sugar is dissolved. Cool, and add pineapple juice and lemon juice. Pour over crushed ice. Garnish with mint or green cherry.

★

Frozen Pineapple Cubes

Pineapple juice
Skewers or colored cocktail picks

Pour pineapple juice into the largest tray of your electric refrigerator. Put in the cube marker, and freeze. When the juice reaches the mush stage, insert a skewer or cocktail pick in the center of each cube. The children will adore these, and they are good for them, too.

Frozen Fruit Compote

1 cupful crushed pineapple
1 cupful pineapple juice
2 cupfuls seedless grapes, orange sections and banana quarter slices
¼ cupful maraschino cherries cut into rings
½ cupful sugar
1 pint ginger ale
1 tablespoonful lemon juice

Combine ingredients and freeze. Serve with game, fowl or meat—excellent with roast pork or roast ham.

★

Epicurean Marmalade

24 ripe peaches
2 fresh pineapples
6 oranges
1 lemon
7 pounds sugar

Pare and cut peaches into small pieces. Cut pineapple into same sized pieces. Peel oranges and lemon, and cut sections in three. Add sugar, and mix well with the fruit. Let stand overnight. In the morning stir well, and cook over a very low heat for one-half hour. Stir frequently. Cook until thick.

★

Minted Pineapple

Quarter slices of pineapple
1 pint pineapple juice
1 teaspoonful oil of peppermint
Green coloring

Lay pineapple in bottom of pan. Mix oil of peppermint, pineapple juice and enough green coloring to make a deep green. Pour this over slices of pineapple and simmer for ten minutes. Allow to cool in liquid. Serve these slices as garnish. The left-over juice may have gelatin added and be made into mint jelly.

★

Pale Green Salad

1 package lime gelatin dessert
2 cupfuls boiling pineapple juice
½ cupful tiny cubes of canned pineapple
½ cupful tiny cubes of cucumber

Dissolve lime gelatin dessert in boiling pineapple juice. Cool. Add pineapple and cucumber. Pour into molds, and chill.

★

Pineapple Fruit Salad

1 fresh pineapple
1 large eating apple
3 large oranges
1 grapefruit
Lettuce
Golden dressing

Cut pineapple into cubes. Cut apple into cubes, and mix with pineapple so as to prevent discoloration of the apple. Add oranges and grapefruit cut into sections. Arrange on nests of lettuce, and pass golden dressing.

★

Chicken Salad with Pineapple

Make your favorite chicken salad, and serve in nests of lettuce. Garnish with finger length strips of pineapple which have been marinated in French dressing, plentifully sprinkled with paprika. Rolled cheese sandwiches are especially good with this.

Pineapple Cream Salad Dressing

⅔ package cream cheese
1 cupful whipping cream
⅛ teaspoonful salt
⅛ teaspoonful paprika
1 cupful pineapple juice
Few drops lemon juice

Work cheese to a smooth paste. Add gradually the cream, salt, paprika and pineapple juice. Just before using, beat well, and add the lemon juice.

★

Pineapple and Cucumber Salad

Finger length strips of pineapple
Wafer thin slices of iced cucumber
French dressing
Lettuce
Pimento mayonnaise if desired
Cheese crackers

Marinate pineapple and cucumber in French dressing. Drain well, and arrange on nests of lettuce. Serve very cold with cheese crackers. Pass pimento mayonnaise if you like a heavy dressing.

★

Golden Dressing

½ cupful sugar
¾ tablespoonful flour
¼ cupful lemon juice
1 cupful pineapple juice, scalded
2 eggs, well beaten
1 cupful whipping cream

Mix sugar and flour. Add lemon juice, and make into a smooth paste. Add scalded pineapple juice, stirring slowly and constantly. Cook over water until thickened. Now pour on well beaten eggs, and cook over water for one mintue. Cool. When thoroughly cool fold in cream beaten until stiff. Serve at once.

★

Pineapple Piquant

As an especially snappy, tasty bit to serve with chops or steak, try sautéing slices of pineapple and then covering the top with sautéed green pepper.

★

Pineapple Rice Croquettes

1⅓ cupful well drained crushed pineapple
2 cupfuls boiled rice
1 cupful fine crumbs
2 eggs well beaten

Mix pineapple and rice. Shape into croquettes. Roll in crumbs, then in egg and again in crumbs. Fry in deep fat (400 F.) until golden brown. These are especially good with chicken à la king.

★

Pineapple with Sweet Potatoes

Sweet potatoes
Salt
Butter or oleomargarine
Cream
Pineapple slices
Bacon fat

Peel potatoes, and cook in boiling, salted water until done. Drain and mash; season with salt, add a tiny bit of butter or oleomargarine and just enough cream to moisten. Place pineapple (one slice for each person) in a baking pan. Make a mound of mashed and seasoned sweet potato on top of center of each slice. Pour two tablespoonfuls of bacon fat over each slice, and bake in a slow oven for one hour.

Mixed Fruit Trifle

Bananas
Fresh strawberries
Fresh pineapple
Macaroons
Soft custard
Meringue

Cut bananas into quarter slices. Cut strawberries in half, and cut pineapple into small cubes. Mix together, and put in the bottom of a baking dish. Cover with crumbed macaroons. Over this pour cold soft custard. Cover with meringue. Set in oven on a board, and brown the top. Cool. Chill before serving. (The board will act as a nonconductor of heat and will prevent fruit from becoming warm.)

★

Hawaiian Rice Pudding

¼ cupful rice
1½ quarts water
¼ cupful sugar
¼ teaspoonful salt
Grated rind of ½ lemon
1 tablespoonful butter or oleomargarine
⅓ cupful seedless raisins
1 cupful crushed pineapple

Boil rice rapidly in water. Add sugar, salt, grated rind, butter, raisins and pineapple. Pour into a greased baking dish. Bake one hour in slow oven.

★

Pineapple Trifle

4 slices pineapple
½ pound marshmallows
½ cupful powdered sugar
1 cupful cream, whipped
½ teaspoonful lemon juice
Strawberries or cherries

Cut pineapple into cubes. Cut marshmallows into small pieces. Mix, and allow to stand in refrigerator until thoroughly chilled. Add sugar and lemon juice to whipped cream, and fold fruit and marshmallow gently into this. Garnish with strawberries or cherries.

★

Pineapple Tapioca

1 cupful pearl tapioca
2 cupfuls pineapple juice
¾ cupful sugar
1 cupful crushed pineapple
2 cupfuls orange juice

Soak tapioca overnight in pineapple and orange juice. Cook in same juice until done. Add sugar and crushed pineapple. Chill. Serve with soft custard.

★

Pineapple Sauce

½ cupful sugar
½ cupful water
Grated rind of 2 California oranges
2 cupfuls finely crushed pineapple

Make syrup by boiling sugar and water together. Add orange rind. Cool. Mix with pineapple.

★

Fruited Meringue Ball

Vanilla ice cream
Meringues
Tiny cubes of fresh pineapple
Fresh strawberries, cut in half
Sugar

Scoop out ice cream so it is in the shape of a ball. Place on serving plate, and press meringue on each side. Add equal parts of pineapple and strawberries. Dust lightly with granulated sugar, and serve at once.

Pineapple Bavarian

1 tablespoonful granulated gelatin
⅓ cupful cold water
3 egg yolks
Grated rind and juice of 1 lemon
½ cupful pineapple juice
½ cupful sugar
Salt
⅔ cupful diced pineapple, heated to boiling point
½ cupful whipping cream
3 egg whites

Soak gelatin in cold water. Beat egg yolks slightly, and add grated rind, lemon juice, pineapple juice, sugar and a tiny pinch of salt. Cook over hot water, stirring constantly until mixture thickens. Remove from range, and add soaked gelatin. Beat thoroughly. Add pineapple. Cool. When mixture begins to thicken, add cream beaten until stiff and egg whites beaten until stiff. Turn into a mold, and chill. Garnish with pineapple and cherries or strawberries.

★

Pineapple Caramel Upside Down Cake

1 cupful flour
1 teaspoonful baking powder
⅓ teaspoonful salt
3 eggs
1 cupful sugar
1 teaspoonful vanilla
½ cupful pineapple juice
3 tablespoonfuls shortening
4 slices canned pineapple
½ cupful brown sugar

Sift flour, baking powder and salt together twice. Beat eggs with sugar until light. Add pineapple juice and vanilla. Fold in flour mixture gradually. Arrange pineapple in greased round cake pan; sprinkle with brown sugar. Pour cake batter over fruit. Bake in a moderately slow oven (325 F.) for about one hour. Turn out upside down on a cake plate. Serve hot or cold.

★

Ready Frosted Cake

½ cupful shortening
1 cupful powdered sugar
1½ cupfuls flour
2 teaspoonfuls baking powder
½ cupful milk
1 teaspoonful orange extract
Whites of 3 eggs
Chopped nut meats
Crushed pineapple, thoroughly drained
Grated sweet chocolate

Cream shortening, and add powdered sugar. Sift flour with baking powder, and add alternately with milk to shortening and sugar. Add orange extract. Beat whites of eggs until stiff, and fold into first mixture. Pour mixture into a greased layer cake pan. Cover top with chopped nut meats. Add a layer of crushed pineapple. Cover this with grated sweet chocolate. Bake in moderately hot oven (375 F.) until done.

★

Pineapple Chiffon Pie

1½ tablespoonfuls granulated gelatin
½ cupful cold water
1 cupful crushed pineapple
¾ cupful sugar
½ teaspoonful salt
1 tablespoonful lemon juice
3 egg yolks beaten well
3 egg whites
1 cupful whipping cream
Baked pie shell

Soak gelatin in cold water for 5 minutes. Heat pineapple, sugar, lemon juice and salt. Pour this on to soaked gelatin, and stir well. Pour at once over beaten egg yolks, and mix thoroughly. Chill. Just before it is set fold in the stiffly beaten egg whites and half the cream whipped. Pour into pie shell. Top with rest of cream whipped and sweetened.

HOW TO AVOID CROOKED TEETH

By JESSIE WHICHARD McKOY

ONE CANNOT stress enough the importance of having a good set of teeth, for crooked teeth and abnormalities of the jaw are responsible for more ill health and unhappiness than many realize. With irregular teeth and jaws the child cannot properly chew his food, and thus good digestion and assimilation are impossible. Badly chewed food throws too much work on the stomach and digestive system, often with resultant disorders which may prove harmful.

Of course, good health is far more important than beauty; but the appearance of the teeth plays an important part in facial beauty and happiness. A child with crooked teeth usually becomes extremely conscious of his deformity and is sensitive and loses poise.

For the sake of health, beauty and happiness the care of the teeth should begin in the cradle and end only at the grave, for a good set of teeth is a priceless asset.

No mother, knowingly or willingly, would deny her child the chance to develop a good set of teeth. Yet many mothers make this mistake without being conscious of it. It is my desire to help you to assure your child of health, beauty and happiness by giving you a few points on the care of the baby teeth to avoid crooked permanent teeth.

ONE usually thinks of the new-born baby as having been born without teeth; but in reality they are in the jaws ready to push their way out and take their place. Teeth are in constant process of formation from 5 or 6 months before birth to 17 or 18 years after birth. Soon after the baby teeth are formed the roots of these teeth begin to dissolve, so that there will be room for the permanent teeth underneath to develop. The growing permanent teeth are in the jaws just beneath the temporary set, ready to push up and take their places as soon as the baby teeth have been shed.

The accompanying eruption schedule shows when the baby teeth and the permanent teeth begin to form and when they should erupt. This schedule is only approximate, and eruption may vary.

Since nature did not intend us to have crooked teeth and since nearly all babies have perfect teeth the question naturally arises, "Why do we have crooked permanent teeth?" Each tooth is held in position by what is called "forces of occlusion." Occlusion is the proper relationship of jaws and teeth to each other, and when there is any abnormal action of the inside and outside forces the result is malocclusion. The next question is, "How can malocclusion be avoided?" Many cases of crooked teeth and irregular jaw formation can be eliminated to a certain extent by taking the child to a competent dentist on the average of every four to six months for a thorough dental cleaning and an examination for cavities. It is a well known fact that the health of the second teeth depends on the care given the first set.

Do not have the impression that the first set of teeth is only temporary and will soon be replaced by a permanent set and that therefore there is no reason why they should have special care. It is essential that these baby teeth should be kept in the best repair for these two reasons: First, these baby teeth are as necessary to the child as the permanent teeth are to the grown person since they are needed for the proper chewing of food, which is necessary for growth and development. Second, it is by holding these baby teeth in place that space is maintained for the permanent set.

How can you save these teeth? By having each small cavity filled as soon as it has been discovered. Never allow a cavity to get to the toothache stage for this means that the decay has penetrated the enamel, with subsequent destruction of the dentine, which will result in irritation and eventually in the death of the pulp and nerve. Decayed or abscessed teeth are sources of infection because poisons in this way get into the system, either by swallowing or through the blood stream. Avoid this condition by taking your child to the dentist at least twice a year so that cavities can be discovered and filled to their original form and shape, thus saving the tooth until it has accomplished its purpose.

SPACE retainers are found to be valuable in preventing malocclusion when a tooth has been lost. If the child loses one of the temporary molars it is important that a space retainer should be placed where the tooth was lost so that the incoming permanent molars will not drift forward and close up the space. Later when the bicuspids have come in and it is time for the eye teeth, which are usually the last teeth to appear, all the space will have been taken up, and the eye teeth will be forced to erupt high up on the outside of the dental arch. These teeth are commonly called tusks. Often the parents want them extracted, thinking it

H. Armstrong Roberts

will improve the child's appearance; but this is a mistake and should seldom if ever be done. The eye teeth are important in the arch because they lend expression and maintain the correct facial contour. An orthodontist, a dentist who specializes in the correction of irregular teeth and abnormalities of the jaw, usually corrects these tusks without the loss of a single tooth.

Often nature is sidetracked, and the teeth of the baby set remain in position too long. This is another cause of malocclusion. Sometimes these teeth are so firm that the incoming perma-

nent teeth do not loosen them as they should but force themselves out at the side. However if the child is under the care of a dentist he will advise when these baby teeth should be removed in order to avoid this condition.

As you see by the eruption schedule the first permanent teeth to erupt are the six year molars. These four teeth, two upper and two lower, erupt just back of the second molars of the baby set, the jaws having grown enough to accommodate them. Watch for these six year molars, and guard them with care. These teeth are known as the keystone or foundation of the dental arch, and they guide other teeth into their proper places.

THERE is a muscular attachment called the labium frenum which extends along the median line between the two front teeth. When this muscle is abnormal and overdeveloped it attaches itself to the roof of the mouth, causing a wide separation between the front teeth. The spacing does not happen if these teeth erupt close together for the cutting edges of the teeth cut the muscle fiber as they appear through the gums. But when they come through widely separated the frenum attachment acts as a rubber band between and prevents them from growing in close contact as they should be. It is easily corrected by a minor operation and causes the child little pain and discomfort. Immediately after this operation some orthodontic appliance should be worn to bring the teeth together before scar tissue has time to fill in the space.

Enlarged adenoids frequently cause the child to become a mouth breather, and mouth breathing causes the upper arch to become high and narrow, with the accompanying protrusion of the upper teeth and the receding chin. Inflamed tonsils are bad too. If the child's tonsils are highly inflamed he will unconsciously protrude his lower jaw to relieve the pressure that is caused by the tonsils. If this is not corrected the lower teeth will eventually become locked on the outside of the upper, giving what is known as the "bulldog" appearance. If you notice any of these symptoms, take the child to a physician for an examination for adenoids and tonsils. If they are diseased, have them removed as soon as possible.

Any habits such as thumb or finger sucking, the use of a pacifier, and incorrect sleeping posture, resulting in pressure around the mouth, will eventually produce malocclusion and abnormalities of the jaws. The bones of a young child are soft and easily molded by pressure. Among these habits, thumb sucking is definitely the most undesirable because the pressure of the thumb on the roof of the mouth causes the upper arch to become narrow; the teeth will protrude, and since the lower jaw is the movable one, the weight of the hand causes it to become locked too far back in its relation to the upper jaw, and thus produces a receding chin. Break the child of this habit before any bad results occur.

A WORD about diet. A point to remember is that the teeth are nourished and influenced by the food we eat just as is any other part of the body. A well balanced diet containing all the necessary minerals and vitamins is important. Give the child a sufficient quantity of fresh fruit, milk, eggs, cod liver oil and all fresh vegetables. Vegetables should be cooked in as little water as possible and should not be cooked too long. Too much cooking destroys the vitamins, and too much water has to be drained off before serving; therefore the drainpipe, not the child, will be the recipient of all the vitamins.

In order to prevent crooked teeth, ill health, unhappiness and unnecessary dental expense in later life, remember that "an ounce of prevention is worth a pound of cure."

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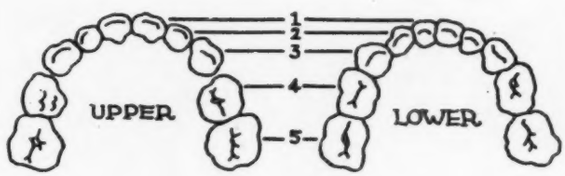
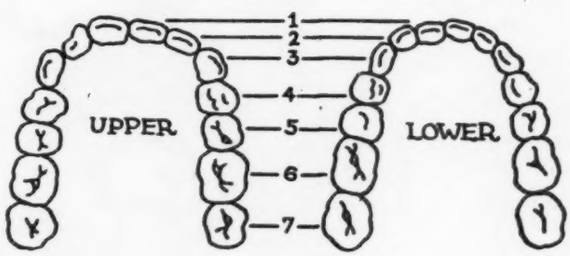


Temporary Teeth

Upper and Lower	Formation Before Birth	Eruption Age
1. Central incisors (front teeth).....	5 months	6 to 9 months
2. Lateral incisors.....	4 months	8 to 12 months
3. Cuspids (eye teeth).....	4 months	16 to 20 months
4. First molars (back teeth).....	4 months	10 to 20 months
5. Second molars (back teeth).....	4 months	26 to 30 months



Permanent Teeth

Upper and Lower	Formation After Birth	Eruption Age
1. Central incisors.....	1 year	6 to 7 years
2. Lateral incisors.....	2 years	7 to 9 years
3. Cuspids.....	2 years	9 to 12 years
4. First bicuspids.....	5 years	10 to 14 years
5. Second bicuspids.....	5 years	11 to 12 years
6. First molars (six year).....	At birth	5 to 6 years
7. Second molars.....	6 years	12 to 14 years
Third molars (wisdom).....	9 years	16 and after

SCHOOL AND HEALTH

A Department Conducted by J. MACE ANDRESS, Ph.D.

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The Teacher's Interpretation of Mischief

THE ELEVENTH OF A SERIES OF EDITORIALS ON UNDERSTANDING THE ADOLESCENT

TOM AND JAMES represent two striking contrasts to be found in almost any class of boys and girls. The teacher's attitude toward them might well be taken as a test of psychologic insight and understanding.

Tom is just 14. He has never had any serious illness. The school physician pronounces him one of the healthiest pupils in the school. He plays hard, eats heartily and sleeps soundly. His body seems to overflow with energy. On his way to school he often breaks into a run. Sometimes he pushes younger boys and girls off the curb or into a fence or hedge, causing minor injuries and falls. Then he laughs at their distress. In the schoolroom, Tom is the bane of the teacher's life. When the teacher is not looking he delights in punching the boy across the aisle in the ribs or pulling the hair of the girl sitting in front of him. If any of those tormented cry out the teacher usually finds Tom reading his book piously. His sense of humor is excellent. He delights in making "wise-cracks" in class to make everybody laugh. In scholarship, Tom is below the average, although he has frequently demonstrated that he can complete an assigned task as quickly as his classmates. Generally, he is rather slovenly in his appearance. On several occasions he has been sent home for his necktie. Tom is popular with his playmates, a leader in all sorts of daredeviltry and always loyal to his gang. He has been so frequently reprimanded that he has become hardened to scolding and immune to advice. Such is the picture of "Tantalizing Tommy."

James is quite a different boy, although he is of the same age. The children have nicknamed him "Slim Jim" because he is so tall and slender. In striking contrast to Tom he has little energy, is slow in his movements and has poor posture. He has had the usual diseases of childhood without any bad after-effects. He complains of headaches, is sensitive to criticism and is exceedingly shy. James is always immaculate in his dress and almost faultless in his manners. However, he is not popular with his classmates. If sides are chosen in a game, he is always among the last to be selected. It is seldom that he is involved in the rough and tumble games of the playground. James studies hard in school, writes a legible hand, gets marks above the average, is always courteous and never gives his teachers any trouble.

EVER since schools began, boys like James have been regarded as "good." They lend themselves like plastic clay to the potter's hands. Such boys do not resist the efforts of their teachers, do exactly as they are told and show little or no resentment to authority. Although they pass for the "goody-goody" type among their classmates, teachers are likely to think of them as having much promise. They are ideal pupils.

But boys like Tom are regarded as mischievous and "bad." Tom seems opposed to much which the teacher is trying to do. He is restless, energetic, bold, fearless, critical, resourceful, strongly self reliant, stubborn and opposed to external authority. Teachers, parents and neighbors hold up their hands in mute appeal to some power greater than their own when his name is mentioned. There are dire prophecies as to his future with some hope that after all he might amount to something.

Is it possible that there may be a mistake about "Tantalizing Tommy" and "Slim Jim"? What would the psychiatrist say about these two boys? Fortunately we know, for within recent years a large body of material on such children has been collected in our clinics. Since the teacher is so vitally concerned with personality traits that are conducive to the management of formal class instruction while the psychiatrist is concerned with adjustment to life in a broad way, they may be expected to differ in their judgments. The psychiatrist is less concerned than the teacher about whispering, truancy, impertinence, quarrelsomeness and the destruction of school property. These are positive traits that show a willingness to grapple with life problems. But shyness, drawing away from life and the building up of a "shut-in" personality he considers as more serious. They may be symptoms of fundamental personality traits leading to more complications in later life. The study of psychotic adults often shows that in childhood and youth they were inclined to be seclusive and have few friends. This does not mean that every shy child is a candidate for the psychopathic hospital, but it does mean that such a child needs help to make better adjustments. James looms on the horizon as the real problem. In some way, James must be encouraged to take a more active part and find satisfaction in play, sport and social activity.

AS FOR Tom, he is only a normal boy who is very much alive. He has many admirable traits: energy, initiative, originality, friendship, courage, intelligence, leadership and the tendency to attack problems, to stay on the battlefield rather than show the white feather or retire from the line of danger. The trouble is not so much with Tom but with his school and teachers who lack an understanding of him and the goals of education. They favor a traditional philosophy in which implicit obedience and dependence rather than self reliance and self management are to

be magnified. It is only common sense to assume that Tom's appetite for mischief should not be allowed to disorganize the school; but his admirable traits so essential for successful living ought not to be repressed. A better way would be to harness his energies now devoted to mischief to worthwhile activities. The friendly and understanding teacher will guide Tom so that he will find an adequate outlet for his physical and mental energies in athletics, managing the school paper and high school dramatics. Probably Tom could carry more academic subjects or work on interesting projects of his own choice with the advice of his teachers.

Today, teachers who are taking their cues from mental hygiene are less concerned with the actual mischief or even the delinquency of boys and girls and more with the reason why such undesirable acts are committed. It is not the mischief but the mischiefmaker that needs understanding. It is quite probable that the "bad boy" is a myth. Perhaps he is just a good boy who has lost his way and needs a helping hand!

CAN HIGH SCHOOLS HELP TO PREPARE BOYS AND GIRLS FOR PARENTHOOD?

FRANCES D. WYNNE
MIAMI, FLA.

The modern school prides itself on being practical; yet it almost entirely ignores the most important problems of life, problems of parenthood with which its students must soon grapple. Can the high school really help? Mrs. Wynne is convinced that it can and tells HYGEIA *readers about her successful work in preparental education in the Miami High School.*

IN 1933 an experimental class in preparental education was begun at Miami Senior High School, Miami, Fla. This was an outgrowth of the exclamation from numerous parents in parent education classes, "If I had only known that, I could have avoided this mistake in training my child!"

My first class in preparental education consisted of carefully chosen senior girls. The following year the number of classes was increased to two, with less careful choice of students. The third year, the course was opened to all junior and senior girls and to one separate class of junior and senior boys. The work was highly successful and vastly popular. The course is

now in its fourth year, with 150 students receiving the instruction daily.

This work is on the regular school basis, one hour class periods five days a week. It is classed in the social science department of school work and carries the regular credit toward graduation. It is also being accepted by many colleges among their regularly allowable entrance credits.

I wrote my own textbook, a volume of 60,000 words, which was privately printed until it could be tested out in practice; and I plan to rewrite it this summer, incorporating additional material gained from these four years' experience in teaching the course.

The units of study include the following: Home Planning; Social Aspect of the Home; Economic Aspect of the Home; Biologic Aspect of the Home; Child Psychology; Child Care and Training; Sex Education, and Choice of the Life Mate. The greatest amount of time is devoted to the unit on child care and training. Here the students learn of conception, pregnancy, child birth and infant care and training. The other units are taken up in the order given, with the exception of that on sex education. This subject is of such vital importance that it should not be limited to any one specified time. Whenever the matter of sex naturally presents itself it is freely discussed. That is the most frequent topic that comes in a high school student's life, and usually it is the one most frequently left undiscussed. But things are different in these classes. Sex is discussed with absolute frankness, and there is no limit to the intimacy of the question, provided the questioner is seeking serious information. Sex is never treated lightly in these classes but is given its due place in life as one of the most powerful and at the same time the most beautiful of all life's influences.

Of course this attitude toward frankness in these discussions must be built up by the teacher. I begin my semester's work by creating a feeling of comradeship, confidence and real sympathetic understanding between the students and myself. That is the basis of success for these classes; there must be unquestioned confidence and respect of the students for the teacher. As a result of this confidence the most important part of the teacher's work is in the personal conferences after school hours. The nature of these conferences varies. Sometimes there comes a student whose home life is unhappy; who feels that the parents are unfair or unresponsive; who rebels at parental restrictions. Sometimes it is a 17 year old girl who has never been asked for a date and who wants help about it.

Help is always available. It may be she needs to dress differently, to use a little rouge, to develop a different attitude toward boys, to gain a more normal attitude toward the opposite sex. Sometimes it is a boy who wants to make a date for the first time and is afraid. Many a time I have helped a boy plan out his first date, with paper and pencil, from making the date, the conversation, the way to put her in the car and to take her into the picture show, finishing up with leaving her at her door afterward. Sometimes it is a question of just how far the high school boy and girl can allow themselves to go in personal intimacies, to insure self control always, with no regrets. Yes, indeed, these after-school conferences are the biggest part of the job.

The classes should be conducted in a most informal manner, the teacher simply directing the class discussion and allowing each class to arrive at its own conclusion. In my own experience, even though some members of the classes may suggest rather radical views of life, never once has a single class failed to arrive at a safe and sane and sensible conclusion. The modern generation has more information than their grandmothers ever had, and they are just as sensible!

In addition to the class discussions based on the textbook, monthly reports of fifty pages are required from outside references in the library. In the classroom, sets of books are kept for use in connection with the daily study in the textbook. Once each week all classes recite from HYGEIA, The Health Magazine, instead of having the textbook lesson for that day. Not only are the students eager to read these magazines, but their families read them from cover to cover. I chose HYGEIA as the best suited magazine for use in connection with these classes because of its breadth of scope of material. It has valuable child training articles and at the same time furnishes

the latest and most reliable information regarding health. The students and many of their families have been greatly impressed by the articles on venereal diseases. After these students finish with their HYGEIA magazines, they often pass them out to other students.

These classes in Miami High School are the only ones in preparental education in Florida high schools. There is a great need for teachers who are qualified to teach these subjects. The average teacher cannot do so. It requires special training. It is the growing need in education today. As one student so aptly said, "Preparental education has been of more help to me, now that I am married, than everything else I had at school."

HOW SAFE ARE YOUR SCHOOL BUILDINGS?

FLORENCE NELSON
Editor, Safety Education Magazine
NEW YORK CITY

The great disaster at New London, Tex., startled the world. How sad that because of false ideas of economy and because of carelessness we should sacrifice the lives of so many children; yet the majority of school buildings are said by some experts to lack safeguards against fire and explosion! Is your building safe? Miss Nelson in the eleventh of her series of articles suggests that summer is a good time to put the school plant in order and outlines what may be done.

THE SCHOOL disaster in New London, Tex., last March was the worst in all American history. It shocked school officials into the realization that even a modern well equipped building may harbor deadly hazards. It emphasized, further, the need for expert advice and workmanship in all matters relating to repairs and alterations in the school plant. Too often these are left to the janitor or custodian, who, lacking the necessary knowledge or technical training, may inadvertently create a dangerous situation.

Commenting on this point at the time of the Texas explosion an editorial writer said: "It is not likely that the committee of investigation which is now conducting its hearings will ever discover how a whole building was so completely destroyed. From the testimony already taken it is evident that a cheaper heating system was installed in place of that originally specified, that the statements of salesmen were accepted almost at their face value, and that a more dangerous high-pressure 'wet' natural gas . . . was substituted for safer low-pressure 'dry' gas. Individual gas-steam heaters much like those installed in the classrooms of New London have been in uneventful use for many years in natural gas regions. There is no reason why they should not be as safe with the right fuel as are the individual gas stoves and gas fireplace-logs to be found in hundreds of city apartments.

"Whether the vents that discharged the products of combustion from seventy-two individual gas-steam heaters through vertical hollow tiles into an attic were properly sealed, so that there could have been no leakage into surrounding walls, cannot possibly be determined from wreckage. In any event, *there was no impartial engineer to inspect the finished installation and report on its safety.* More significant was the change from low-pressure dry to high-pressure wet gas—*a change which no competent engineer would have made with the directness and disregard of possible consequences* that seem to have characterized the economizing at New London. Even the salesman who persuaded the school to buy his heating system was shocked at the recklessness of the change, and insisted on the pressure-reducing regulators that were eventually adopted.

"Since this catastrophe must obviously be attributed to false economy and to technical carelessness or ignorance, the need of a building code for the natural gas regions of Texas is clearly called for. The State has already declared its intention of enacting one. Other communities . . . will do well to examine their existing regulations. Despite such legislative aid school boards will still be confronted with the problem of safety. If they are charged with extravagance because they insist on sound construction and good engineering design, they have but to point to the horror of New London."

There is little excuse for using anything but expert service in the planning and maintenance of the school building. Gas and electric companies will provide competent inspectors. City fire chiefs, state fire marshals and engineers of state insurance inspection boards will make surveys and report hazards which should be eliminated. Architects and industrial safety engineers can also be called on for technical advice.

The complete official report on the Texas disaster is not available as this article is written. In his preliminary report, Dr. David J. Price, explosion expert of the U. S. Bureau of Chemistry and Soils, states that in his opinion the explosion was due to the ignition of an accumulation of combustible gases in an open area underneath the first floor of the building by a flash from electrical equipment in connection with the operation of a sanding machine located in the manual training shop. Dr. Price recommended the following precautionary measures for prevention of explosions in public buildings and institutions:

1. Requirement for use of effective malodorants for detection of escaping combustible gas due to leaking equipment or other causes.
2. Determination of practical application of gas indicators to detect presence of escaping combustible gases at percentages below the lower limit of explosibility and development of alarm systems and warning devices for school houses and buildings.
3. Provision for supervision and inspection of public buildings and installations of heating and lighting devices and equipment.
4. Installation of all electrical equipment and appliances in accordance with requirements of National Electrical Code.
5. Provision for proper construction of buildings to prevent dead storage space underneath class recitation rooms and similar meeting rooms where dangerous gases can accumulate.
6. Provisons for adequate ventilation of all necessary spaces under all occupied sections of public buildings.
7. Provision for adequate ventilation at all times for schoolrooms using gas heating appliances.

According to T. Alfred Fleming, conservation engineer of the National Board of Fire Underwriters, over 60 per cent of the school buildings in the country lack proper safeguards against fire and explosion. In large numbers of buildings the heating plant and fuel supply rooms are not cut off

from the main corridors by fire-resistant walls, ceiling and doors. Thus superheated air can rise from the basement, where the majority of fires start, and travel through the structure. Inside stairways should be made fireproof. There should also be connecting doors in the classrooms so that if a particular corridor is menaced by fire, pupils can go through a series of rooms to reach a fire-resistant stairway.

Following the Texas explosion many state officials immediately ordered careful inspection of all schools and other public buildings. Undoubtedly much has already been accomplished in the interest of greater safety. However, the summer is the most favorable time for inspection and repairs. While the responsibility for making the building structurally sound rests with the school board, the teachers and the principal can do much to focus attention on existing hazards.

In discussing this problem recently a principal remarked: "I am glad to see a change in attitude with respect to necessary repairs and additional safeguards. In the past we have made too much of a virtue of economy. We have felt rather complacent and proud over making the best of bad conditions, instead of admitting that children were in grave danger."

The National Board of Fire Underwriters has prepared a self inspection blank for schools which has been approved and adopted by the National Association of Public School Business Officials and the International Association of Fire Chiefs. It is available without charge to school and fire department officials and already has been used extensively throughout the country. The National Board suggests that inspections be made at least once a month by a group comprising a teacher, the janitor and a representative of the local fire department. Reports, as completed, should be filed with the local board of education. The blank is suitable for all sizes and types of schools. It may be obtained from any one of the three offices of the National Board of Fire Underwriters: 85 John Street, New York City; 222 W. Adams Street, Chicago, and Merchants' Exchange Building, San Francisco.

The U. S. Office of Education has available a publication, "Safety and Health of the School Child," which lists more than 200 questions school officers and parents might ask themselves concerning safety and health conditions in their schools. The education division of the National Safety Council, 1 Park Avenue, New York City, has a bulletin offering suggestions for a non-technical self survey which was prepared with the assistance of Dr. George Strayer of Teachers College, Columbia University. Both these publications are available free in single copies.

THE USE OF THE INDIVIDUAL HEALTH SURVEY IN HEALTH EDUCATION

D. B. ROSENBERG
Instructor, Health Education,
Boys High School
BROOKLYN

The teacher who wishes to promote the health of pupils must know about their mental and physical needs. Without such information there can be no clear goals and no way of measuring results of health instruction and training. Mr. Rosenberg suggests the individual health survey he uses to get information and tells how it is used.

IT IS a keystone of modern educational philosophy that the curriculum should be adapted to the child. To fulfil this demand the school must possess full and intimate knowledge of the nature and needs of its pupils. Of inestimable value in this respect is scientifically ascertained knowledge of the individual child's health.

Supervisors of school athletics pioneered in using the doctor's examination educationally by demanding medical certification of cardiac fitness as a prerequisite for participants in athletic competition. The next step—beyond which, sadly, many schools have not yet gone—came with the inclusion of physical education as an obligatory course in the curriculum, the school becoming conscious of the necessity of having medical certification of fitness for all its students.

However valuable, these steps constitute no more than a precautionary measure on the part of the school, a function far transcended by the potential educational uses of the examination.

To be sure, a medical examination limited to stethoscope and sphygmomanometer and little else is not to be confused with the comprehensive examination of the child implied in the individual health survey. This connotes a thorough-going examination by the physician, including or supplemented by a series of physical tests and inspections, such as the Snellen chart test for vision; the simple tuning fork test, or the use of the audiometer, for hearing; inspection for general cleanliness and health, for abnormal conditions of nose, throat or skin and for posture faults; use of the pedograph and other simple examinations for foot health; tests for circulatory capacity for exercise, such as the simple Foster test, and examination of the nervous system by testing reflexes and by testing for the Argyll Robertson pupil and Romberg's symptom. A dentist's examination and a case record of the history, environment, traits and habits of the child would round out this survey.

Preferably these tests and inspections should be a part of the examination by the physician. If this is not feasible, the duty devolves on the faculty of the school. The experienced classroom teacher with postgraduate study in health education, the teacher with graduate work in health and physical education, and of course the school nurse are well qualified for the task of supplementing the cursory medical examination.

Only through such a survey can an adequate picture of the physical child be gained. But once gained, what then? Far too often the culled data are recorded, neatly filed and permitted to do little more than gather dust. In allowing this to happen the school becomes a party to the waste not only of valuable time, energy and money but, more tragically, of human potentiality, for the record of the survey bears tremendous value for the proper education and guidance of the child.

In the physical education program, particularly in its individual corrective work phase, the record is most pertinent. Special exercises for relaxation, for correction of postural deviations and for foot trouble are frequently indicated by the survey. Where organic or functional deficiencies are brought to light, pupils must and should be accorded curtailed or specialized activity in place of the full, vigorous program.

In the intimately associated work of health instruction, teachers desirous of making their lessons meaningful and of personal value

(Continued on page 664)

QUESTIONS AND ANSWERS

Home Treatment for Infantile Paralysis

To the Editor:—Having heard the radio program of the American Medical Association on infantile paralysis, I am asking you to send me your book "What to Do About Polio." I have been sick four months. I am 23 years old and have been married two years. I am now walking on crutches, and the doctor said I would never walk again without the use of a cane. Can you suggest any treatments I can take at home as I cannot afford to go away?

F. H., Missouri.

Answer.—Warm water exercises similar to those given at spas or medicinal springs may be taken at home. It is quite possible to build a tank which will be large enough for the purpose of exercise and will be relatively inexpensive. If the physician in charge of the case is not familiar with the methods of construction, of equipment or of underwater exercise he can write to the American Medical Association Council on Physical Therapy for information.

Persons who require treatment for infantile paralysis but are not able to defray the expenses may apply to the local agencies which expend the money raised by the President's Birthday Ball each year. Seventy per cent of the money raised at these balls is left in the home community for use there, and those suffering with poliomyelitis who need treatment are entitled to aid from this fund if they cannot pay their own expenses.

Venereal Disease

To the Editor:—What danger is there of getting venereal diseases from public toilets, bath tubs, lavatories, drinking fountains, towels, dishes and the like? How are venereal diseases acquired other than by sexual relations?

K. C. E., Maryland.

Answer.—The terms "social disease" and "venereal diseases" usually refer to syphilis and gonorrhea. It is possible for both syphilis and gonorrhea to be contracted without sexual intercourse; but while possible, it is not usual. Coming in contact with a case of syphilis that is in an infective stage by kissing the person, using the patient's linen, drinking from the same cup or using his pipe may act as the source of infection. It is necessary, in such an instance, that the person use these materials almost immediately after they have been infected by the patient. The same is true of gonorrhea. Some of the purulent material may be left on a towel or transferred from the hands of an infected person. Again, while this is possible it is quite unlikely to happen and would be most unusual.

A patient may suffer from syphilis and still not have any symptoms whatever. There is no immunity for either gonorrhea or syphilis. One attack does not preclude further attacks. When a patient has recovered from syphilis or gonorrhea he can be reinfected and contract an entirely new case.

Closing of Lower Teeth Over Upper

To the Editor:—My boy of 9 closes his lower teeth over the upper. His appearance is normal; his features are good. He is bright and has a healthy body. When all his teeth are grown it will be very noticeable. He has five permanent teeth on the upper row and seven teeth on the lower, six of which are permanent. I can remember that some of the men in my father's family had this protruding jaw. One dentist told me that there were some parts of England where nearly all had this. My people are from England. Could something be done at the age of 9? My husband and I close the mouth naturally.

C. P., Quebec.

Answer.—Something can be done for your 9 year old boy. Generally speaking, this is about the right age to begin treatment. It is advisable to place him as soon as possible under the care of an orthodontist, a dentist who specializes in the straightening of teeth.

Sex Education for Children

To the Editor:—If you were teaching a class of first grade pupils and one of them asked you where he came from, what would be a good way to deal with such a situation? Also in similar situations what would be your answer if you were asked why a "mama robin" didn't marry a "papa sparrow"? Is it best to try an explanation of such questions to children?

N. J. T., New York.

Answer.—The questions asked by the children with reference to their origin and to the "marriage" of birds should have been answered by the parents before the children reached the first grade.

The probabilities are that such questions should be answered by a teacher if the teacher is prepared with the necessary facts. They probably should not be answered in the open classrooms. They may be of little or no interest to children other than the ones who have asked them. In general, it is best not to hurry children with respect to sex curiosity. If they ask questions, the questions should be answered. It would seem that the best sort of reply would be a casual statement to the effect that the question will be answered after class, since probably it does not interest the other children.

Even then the teacher will need to be a trifle cautious. Perhaps the parents have the old-fashioned idea that children should not be told anything. If this is true they will not thank the teacher for giving information. After the class has adjourned, the child who asked the question can be told that it is a question which he had better ask his mother and father first and that if they so desire the teacher will help to explain the matter to him.

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

Vegetable Substitutes

To the Editor:—Do you know of any good preparation in the form of a dehydrated compressed vegetable tablet that would be useful to give a boy going away to boarding school where he could not get fresh vegetables? This would not be a medicine but a food.

C. C. R., Canada.

Answer.—A number of attempts have been made to substitute for fresh vegetables. The only one that has found acceptance by the American Medical Association Council on Foods is known as Spintrate Tablets, manufactured by M. & R. Dietetic Laboratories, Inc., Columbus, Ohio. These are candy-coated powdered spinach tablets, and they contain the same values as spinach. Each tablet contains 0.4 gram of powdered spinach and 0.2 gram of sugar coating. It will readily be seen that it will take a considerable number of tablets to get any appreciable amount of spinach.

In the interest of honesty we are compelled to point out that there is no substitute for fresh vegetables except properly canned vegetables. Use of dried vegetables under special conditions such as polar expeditions is an exception to this rule. A boy who does not like fresh vegetables should be educated to like them and not pampered by being given substitutes. There is more to the eating of vegetables than merely the getting of vitamins and minerals. The flavor and the texture of the vegetable form part of its food value, particularly the residue which it leaves in the bowel, which helps to regulate bowel action and avoid constipation.

A boy who is going away to school should not be allowed to go away with any idea that he can have special privileges. If he has any such idea he will be most certain to be exceedingly unhappy. He should be taught to eat a general, all-around diet or else go without food. An intelligent boy will not long take the wrong alternative when he is faced with the choice between eating what is put before him and going hungry. This may seem like a hard-hearted and brutal attitude; but as a matter of fact, for the boy's own good, it is the only constructive solution for such a problem.

One of the reasons why many persons do not like vegetables is because so many cooks seem to think that when they have cooked the meat they have done their duty by the meal. Many of the so-called vegetables which are placed on the table really offer an excellent excuse for any one who does not like vegetables. All too often they are either insufficiently cooked, cooked too much or cooked so unattractively that they repel instead of attract. A skilful cook soon learns to prepare vegetables in so many different and attractive ways that children eat them in spite of themselves. Vegetables can be served in soups, in ordinary salad, in gelatin salad and in many ways, all of which are described in cookbooks.

Another consideration for those who are not particularly fond of vegetables is that fruits are the next best item of diet. Fruits contain vitamins, minerals and roughage, as do vegetables. If large amounts of fruit are eaten it is not so important to eat as many vegetables. The sensible diet, however, includes plenty of both fruits and vegetables, both raw and cooked. In addition to vegetables the diet should have plenty of milk. Beyond that, a person may eat virtually what he likes; but his first duty to himself and his future health is to include in his diet plenty of fresh milk, fresh vegetables and fresh fruits. This is a lesson which every child should learn, no matter whether he comes from a privileged home or from an underprivileged home.

Fracture of Jawbone on Removal of Teeth

To the Editor:—Is fracture of the jawbone common in the removal of molars or wisdom teeth? In the left lower jaw, two molars and an unerupted wisdom tooth were to be removed. X-ray examination failed to reveal any complicated root attachment of either molar; the wisdom tooth was lying horizontally on the jawbone without root attachment. When the molars were removed, one had a small cavity; the other was perfectly sound. After the molars were extracted, an elevator was placed under the exposed face of the wisdom tooth. When pressure was applied, the jawbone was fractured. Five weeks later two large pieces of bone, each with a root of a molar attached, were removed. The dentist advocates the removal of the same number of teeth from the right lower jaw—a little later on, of course. However, after seventy-seven days in the hospital, during which the fracture abscessed, was lanced and drained for six weeks, the patient naturally hesitates.

L. A. S., Pennsylvania.

Answer.—The experience of this patient cannot be classified as common, because thousands of impacted teeth are removed annually with few serious complications.

Contrary to the belief entertained by many of our readers, however, the removal of impacted lower wisdom teeth should always be considered a serious surgical operation. That portion of the lower jaw which contains the unerupted tooth is largely occupied by the tooth itself, leaving only a small amount of bone tissue to support the jaw after the unerupted tooth is removed; and some of the overlying bone tissue must be removed in order to permit the delivery of the tooth. In addition, unerupted teeth are notoriously prone to malformations which frequently complicate their removal. These malformations are often not discernible in the roentgenogram.

Without examination of the roentgenogram of the tooth in question, it is impossible to give an opinion as to the cause of the difficulties which were encountered in its removal. Unerupted teeth are occasionally involved with infection which further weakens the bony tissues surrounding them and renders the jaw more liable to fracture than would be the case if the surrounding bone were normal. Jaw bones, like other bones, vary with different individuals. Some are fragile and fracture easily; while others will resist great stress without injury. For the foregoing reasons, fractures of jaws during the operation of removal of impacted teeth occasionally occur.

When the removal of an impacted tooth is necessary, it may be advisable to have the operation performed by one who limits his practice to oral surgery.

Chills

To the Editor:—What happens when a patient has a chill? That is, just what takes place in the body? Is the incubation period of the chill short or sudden?

M. F., Illinois.

Answer.—The body responds by several defensive reactions to the absorption of poisons of various kinds and particularly to bacterial poisons. One of these methods is an increased production of heat. When the temperature of the interior of the body rises rapidly a sensation of chilliness results since the external heat radiating surface, or the skin, has a lower temperature than the interior. A reflex through the heat regulating center in the brain causes a dilatation of the blood capillaries of the skin and an increased flow of blood through them. The skin now being flushed and hot the sensation is one of warmth rather than of chilliness. The radiation of heat from the skin is increased. Other means of dissipating heat are also brought into action in an effort to maintain a normal body temperature. The events leading up to a chill are of short duration.

(Continued on page 669)

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More people in this country have now reached the age of 60 than ever before—due in part to better observance of the laws of hygiene. Furthermore, their numbers will increase.

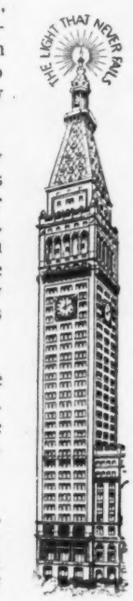
Whether one looks forward to a time when he can be increasingly useful, or to well-earned leisure and contentment, age 60 offers a wealth of future possibilities. Be ready to enjoy your sunset years. Follow these few simple rules:

Good Mental Habits. Many have learned to make their lives richer and fuller by keeping their minds young and open to new ideas. Keep up your enthusiasm. Learn more about those subjects you like best, or take time to explore new fields. An interesting hobby adds to the enjoyment of life.

Sleep and Rest. Older people need more frequent periods of rest. While you sleep or rest, Nature does her best repair work—restoring the energy you have used up.

Food. Eat less as you grow older. Three "square" meals a day, easily digested in earlier years, may not be necessary as time goes on. If you eat moderately your meals will probably be just as enjoyable and more healthful.

Water. Drink plenty of pure water, beginning the day with a glass or two and drinking freely during the day. The body needs water to help carry off waste products. When Mark Twain facetiously said, "A moderate amount of drinking water never hurt anyone," he was entirely right.



Sunshine and Fresh Air. You need these two great tonics all year round. Let the sun shine on you; it kills germs and brings health. But in sweltering weather be especially careful not to overtax yourself. Fresh air, like sunshine, is a friend to good health. Breathe it deeply.

Exercise and Play. Get some form of moderate exercise every day. It is an excellent aid in prolonging life. Without exercise the muscles become flabby. If you can make play of your light exercise, so much the better. When recreation stops, old age begins.

Ask your doctor at least once a year for suggestions as to what you may safely do, as well as wisely avoid. Send for free booklet, "Health, Happiness and Long Life"—a guide to better health all through life—from youth to old age. Address Booklet Department 737-Z.

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QUESTIONS AND ANSWERS

(Continued from page 658)

Hog Stomach

To the Editor:—I have been on the liver diet for the past two years or more and was asked by a friend to read what Melvin Price Isaminger had to say in October HYGEIA about the use of the hog's stomach. Can the preparation described be obtained at the markets, and where would one be able to obtain recipes to prepare it?

Mrs. C. A. M., New York.

Answer.—While it is correct that whole hog stomachs are of benefit in the treatment of pernicious anemia, they do not lend themselves to home preparation. In the first place, whole hog stomachs of the kind required are not ordinarily available in meat markets. Then, the product must be prepared under strict control of temperature, and later it is subjected to complicated processes that are not found in the home.

Whole hog stomach preparations are classed as medicine and should be procured through the physician who prescribes them.

Festering of Hairs on Stump

To the Editor:—I lost my foot in an accident in 1932 and have been trying to wear an artificial limb for about four years. The pressure on my stump, however, causes little festers around the hairs, and after a little while the rubbing of the leg turns them into painful sores. I have tried six different artificial limbs made by three different companies. So far as I know, I do not have any kind of skin disease. Is there some treatment for the skin that would stop this festering of the hairs? I have almost had to give up my job several times in the past few months on account of this trouble, and I would feel deeply indebted to you if you can suggest some remedy. Also, if you can conscientiously do so, I would like to have you tell me what artificial limb company you consider more able to handle a difficult case of this kind.

W. I. D., West Virginia.

Answer.—It is evident that pressure on the stump pushes into the hair follicles some of the staphylococcus germs which exist on the skin of nearly every individual. These germs are harmless to the normal or unbroken skin, but when they penetrate through the outer layer along the hair follicle, they

set up an inflammation which is made more severe by friction and pressure of the stump socket. It is not advisable to attempt to sterilize the skin by the use of antiseptics. The constant use of mercurial antiseptics is generally undesirable because they contain mercury and might, after a long time, act unfavorably on the general health of the individual. Other chemical antiseptics are not so efficient.

Washing the stump daily with soap and water and the daily use of a fresh stump sock which has been boiled for at least ten minutes will lessen the tendency to infection.

The best solution of the problem would be to have the hairs removed permanently by the electric needle. This method is practically painless but is rather slow, as only a few hairs should be treated at a time. This permanently kills the root of the hair and leaves the skin smooth and hairless. If the trouble occurs only at the end of the stump, over a relatively small area, this is by all odds the best treatment. It must, however, be done by a competent operator, preferably a doctor who specializes in skin diseases.

There are many kinds of commercial hair removers in the form of pastes or applications, but none of these will remove hairs permanently, and some of them cause irritation and inflammation. They simply dissolve the hair and do not destroy the root, so the hair soon grows again.

Many manufacturers of artificial limbs advertise in the medical journals, including *The Journal* of the American Medical Association. The patient's physician can furnish the names of these manufacturers.

Heredity

To the Editor:—Roy and Iris are each aged about 30. Iris evidences a strict self discipline generally but with no apparent tendency whatever toward a neurotic disposition. Roy has been self educated and self trained and is a promising creative worker. In personality he is an ambivert through a conscious effort not to be too introverted. Practically nothing is known of Iris' family tree beyond her immediate family. Both parents are apparently normal mentally, but a sister, the only other member of the family, is an imbecile. In Roy's case the only mental weakness he is acquainted with is in his mother and her sister, who suffered from hallucinations of a minor sort. His mother was once examined

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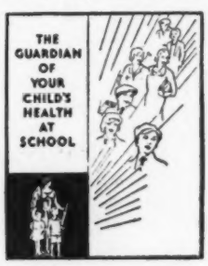

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psychiatrically and pronounced normal. A maternal blood uncle spent several years before death in a mental hospital; but he is supposed to have been invalided through a head injury received in the course of his wire-walking act. It is certain he had previously led a successful circus career for upward of thirty years. The present condition of Iris' sister, who is in her middle twenties, is explained by the parents as having been caused by infantile paralysis in infancy. Specifically, she speaks, acts and comprehends instruction much after the fashion of a 1 or 2 year old child and is seemingly as docile. Physically, her only deformity is an excess of fat suggesting an imbalance of glands equal to that of her mental faculties. Hands, head and feet are proportionately large with respect to the body. That the condition is an aftermath of poliomyelitis, Iris doubts, and such doubt has caused her to restrain her friendship until now to those of her own sex, fearful of marriage lest a similar thing appear in her children. Advice of well meaning friends has, of course, not diminished this fear. What is your opinion on the advisability of marriage between these two persons? Also, is it possible to establish by medical examination or determine otherwise whether the sister was born this way or was made so through illness?

G. F. M., Canada.

Answer.—There are several uncertainties involved in this problem. First, it is not evident whether the imbecility of the sister of Iris is inherited or acquired, and there seems to be no way of ascertaining this without a thorough history of the case. Unless it is definitely known that the sister was entirely normal mentally before the attack of poliomyelitis it is not likely that the disease was the cause of the defect. Probably most cases of imbecility are to be attributed to hereditary factors. If the case is one of simple mendelian recessive inheritance, as several kinds of imbecility are, then the chances that Iris would be a carrier of the hidden defect would be precisely two to one.

Unless the husband of Iris carries the same hidden trait, and there is no adequate evidence that he does, the children of Iris would probably all be normal, but some of them would probably be carriers. On the whole, the chance that imbecility would appear in the offspring of the union contemplated is rather small.

A FINE BODY MAY CONCEAL

TUBERCULOSIS

But modern methods uncover it before it does harm

Let the Doctor be your guide

The evidence that tuberculosis can lurk in a strong young body is now complete. In the routine examination of students and athletes the tuberculin test frequently reveals this disease hiding away in the lungs of persons who appear to be in excellent health. The lung may harbor tuberculosis germs for months without a telltale symptom. Suddenly the disease may show itself by a hemorrhage from the lung. Or it may only hint at its presence by a cough that hangs on or by loss of weight, indigestion or unexplained fatigue. By that time, serious damage has already been done.

But all this need not happen to you. Science has contributed a manner of finding out what the lung harbors in the way of disease. The tuberculin test, simple and harmless, shows whether or not the germs have invaded the body. If it is positive, take the next step: have an x-ray picture made of the chest. This will reveal any damage that may have been done in the lung by these invaders.

Tuberculosis shadows the lives of more than 100,000 young American men and women between the ages of 15 and 25. About 12,000 in that age group will die of the disease this year, and many will be obliged to quit school or work, and some shall have to give up cherished plans for a life career.

To create health and to lessen suffering, to serve and cooperate with others near and far—these objectives make happiness possible, and that, in the widest sense, is the object of all Junior Red Cross work.

—League of Red Cross Societies.

EYESTRAIN IN CHILDREN

Eyestrain may be defined as any extra exertion that is required of the eyes in order to get the best vision of which those eyes are capable. Strain always exists when the eyes are not optically correct because the eyes work automatically and always make every effort to see as well as they can. The three optical faults which induce eyestrain are farsightedness, nearsightedness and astigmatism, according to an article in *The Sight-Saving Review.*

Farsightedness, or hyperopia, does not mean good vision in the distance. Actually, it means that the eyes have to strain even when they look in the distance, and the more farsighted a child is, the more his eyes must strain. The image falls too far back on the retina, even when the eyes are looking in the distance, and the retina does not receive a clear-cut picture until the focusing muscle starts working and brings the image up to the retina. Therefore the focusing muscle never gets a rest, and for close objects it must work more than in normal eyes.

Myopia, or nearsightedness, is another story, the article states. In addition to having defective distant vision, nearsighted eyes are inherently weaker, and their supporting structures allow a certain amount of stretching. The more the eyeballs stretch, the more nearsighted they become; so every effort must be made to keep them healthy and strong.

Optically, the myopic eyes are so constructed that distant vision is not clear because the image falls in front of the retina. The focusing muscle cannot help for distant vision because it works only when the image is behind the retina, and never when it is in front. With less than normal focusing to do, the eye naturally becomes lazy, and a lazy eye is not a healthy one.

Nearsightedness tends to increase with age, the author believes, but the amount of increase can be controlled to a great extent by proper optical and hygienic care. The most critical period is in the early school life, between the ages of 7 and 14, and if the nearsightedness is carefully treated during those years, it can usually be held to a minimum. Periodic examinations are necessary to determine the progress of the myopia and to keep the glasses up to the full strength.

Some counties and cities spend 40 cents on educating a child but will not spend 4 cents on preventing disease.

TRAINING THE BABY

Good habits for the baby are founded on regularity in eating, sleeping and emptying the bowels and bladder. Training in regularity in feeding and sleep should begin on the third day of life, when regular nursing is established. Bowel training should be begun by the third month and bladder training by the eleventh month.

As a rule a young baby should be fed every four hours, from 6 a. m. to 10 p. m., unless the doctor orders otherwise; and usually, if the baby is sleeping when his feeding times come, he should be wakened and fed. Until the baby is 2 months old he may be fed also at 2 a. m. but not unless he wakes by himself.

A very young baby sleeps most of the time and can be trained early to have his longest sleep at night. As he grows older he needs less sleep, and the mother should see that his waking hours are in the daytime, preferably in the late afternoon, so that he will not be wakeful at night. The daytime naps should be planned with this in mind.

Put the baby in bed about 6 o'clock. Do not play with him after that time or allow him to stay up to amuse the family. Make him comfortable. Have the room in which he is put to bed quiet, cool and dark. Shut the door, and let him go to sleep by himself.

Do not spoil the baby by picking him up every time he cries. Crying may mean that he is hungry or uncomfortable or merely that he wishes to be noticed. Find out whether he is uncomfortable, but do not rock him, pick him up or feed him before his regular time just to stop his crying. A certain amount of crying is not harmful. It even gives him some exercise.

Do not give in to the baby if he holds his breath, cries or shows temper in other ways. If he does this he is already being spoiled. Father and mother should work together to teach the baby good habits.—*U. S. Department of Labor, Children's Bureau.*

Each of the billions of red blood cells in the body contains, besides life-giving oxygen, a charge of electricity. Two scientists of the Biological Laboratory at Cold Springs Harbor, Long Island, N. Y., have measured this charge. The electricity of the blood cells of a full grown man, they found, would light a 25 watt bulb for five minutes.

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HOME CANNED TOMATOES LOSE VITAMIN VALUE ON SHELF

Canned tomatoes and tomato juice are two of the readily available sources of vitamin C, but it has recently been determined by investigators of the Bureau of Home Economics of the U. S. Department of Agriculture that after being canned by approved home methods and stored, the tomatoes lose some of their vitamin C value. In fact, they may lose from 21 to 55 per cent, depending on whether they are canned in glass or in tin and on how long they are stored.

The vitamin C substance in foods is cevitamic acid. The vitamin C potency of tomatoes and tomato juice was measured until recently by the biologic method with guinea-pigs. These tests require a long period of time to make and are being replaced by the rapid chemical test for cevitamic acid. Since home-canned tomatoes are so commonly used as a source of vitamin C, the Bureau of Home Economics undertook a six months' study to learn by chemical analysis the effect of home canning and storage on the cevitamic acid originally present in the fresh tomatoes.

Results of the experiment show that both home canning and storage have a significant destructive effect on cevitamic acid. When whole tomatoes and tomato juice were canned in tin, they suffered about equal losses of cevitamic acid during both canning and storing. When canned in glass, the juice lost more of its cevitamic acid than the whole tomatoes.

RED CROSS FIRST AID COVERS INDIA

Acting on the advice of the League of Red Cross Societies, the Indian Red Cross has inaugurated a scheme of highway first aid designed to cover the whole of India. Steps are being taken to provide first aid posts in suitable buildings like police stations, petrol-filling stations, garages, toll posts and dak bungalows (road houses for travelers). The equipment of each post will consist of one light stretcher, one blanket, one first aid outfit and a signboard. The material will be entrusted to fully trained first aid workers.—*League of Red Cross Societies, Monthly Bulletin.*

Persons suffering from nervous ailments are usually difficult to convince that they are not the victims of serious organic diseases.

SCHOOL AND HEALTH

(Continued from page 656)

to their students have in the record of the survey a veritable mine of valuable facts.

Classroom adjustment should follow the discovery and correction of such serious deterrents to learning as defects of sight or hearing. In addition to rearrangement of seating, the school should in such cases recommend medical attention.

Malnutrition, glandular dysfunction and foci of infection are examples of conditions exposed by the survey which are drains on the health and vitality of the child and therefore on his ability to learn and study. Individual advice and follow-up work in cooperation with home and physician are incumbent on the school.

Finally, the record of the survey should furnish the basis for an individualized program of guidance carried on by skilled and experienced school counselors, dedicated to the encouragement of sound health habits and the correction of those which are unsound.

How may the collecting, correlating and using of the facts unearthed by the health survey, the possibilities of which I have but faintly sketched, be best carried forward? A satisfactory *modus operandi* is afforded by the modern department of health education instituted in each school by the school boards of educationally progressive states. The system in the high schools of New York City is typical.

Under health education three divisions are grouped: health supervision, health instruction and physical education. Teachers of health education are deemed qualified, at least by training and learning, to fulfil the duties of each. Under the first, health supervision, the individual health survey is carried on, in close cooperation of course with physician and dentist.

In each high school the health education office, ideally pictured, is a clearing house through which the data of the health survey are passed on to the child's family, the physician, the dentist and the interested members of the faculty. Where a health council, comprising the chairmen of the different school departments, has been formed and is active the vital task of dispensing the data of the survey has been facilitated immeasurably.

Conditions elsewhere probably will dictate modifications of this setup. But, granted a skilled, energetic faculty, plus the modicum of facilities, every school should be able to adhere to the basic principles followed by the New York

City system. These are (1) the expansion of the usual medical examination into a comprehensive individual health survey and (2) the cooperative effort of faculty members and of school, home and physician to employ the survey educationally.

No school dedicated to the welfare of the individual child can afford to disobey these principles.

To Contributors:—*The editor of the School and Health Department will be pleased to receive articles dealing with the actual solution of concrete and practical health education problems in the school. Contributions on general theory are not solicited. Articles must not exceed 1,000 words in length. Stamps should accompany manuscripts to insure their return if rejected. All articles accepted will be paid for at regular rates. Address Editor of School and Health Department of* HYGEIA, *67 Clyde Street, Newtonville, Mass.*

CERTIFICATES ARE IMPORTANT

The supreme importance of filing a birth or a death certificate is seldom realized at the time it becomes a record. However, when the question of citizenship arises; when proof is demanded of heirs claiming estates, veterans' compensation or life insurance, or when statements are made regarding health conditions in the state, the value of these important records is realized with appreciation.

The value of a birth or death certificate cannot be overestimated, and the records on file with the state board of health, which have been compiled during the past years, are being used every day to help some one. Many citizens have been put to considerable inconvenience and often to great expense because a birth or death certificate was not filed at the time of occurrence.—*Florida Health Notes.*

PAIN

Mankind has a priceless gift in the pain that comes to him as a warning that something is wrong. It is an alarm system without which he could not live for long. But it is not always easy to tell the meaning of pain. Pain in one place may be "referred"; that is, the cause may be in another region. Headache may mean any one of a dozen things. Abdominal pains are often deceptive. Pains in the foot or hand usually mean disorder close to the seat of pain. Pains that persist, or are severe, require explanation by a skilled physician, accustomed to distinguish between the true and the false, who will attribute them to their actual causes.

1936 ACCIDENT DEATHS TOP 1935

The National Safety Council disclosed recently that tornadoes, floods, excessive heat, increased employment and a sharp jump in motor vehicle travel pushed the 1936 accident death total to 111,000, wiping out the previous all-time high record set in 1934 at 101,139.

In its annual summary the Council estimated that carelessness and recklessness cost Americans $2,630,000,000 in wage loss and medical expense; $830,000,000 for property damage in motor vehicle accidents, and $290,000,000 for fire loss, a grand total of $3,750,000,000 compared with $3,450,000,000 for 1935. The year of fatal mishaps was computed to have set an accident death rate of 86.4 per hundred thousand of population, the highest since 1917.

For the first time in eight years, fatalities resulting from accidents within homes were reported as more numerous than those from automobile traffic accidents: 39,000, or an advance of 7,500 from the 1935 figure for the former, against 38,500 for the latter, both 1936 figures being all-time records. Motor vehicle accident deaths in 1935 totaled 36,400.

The council's report showed that of the increase in home accident deaths, 3,500 were caused by excessive heat last July and August. Permanent disability from home accidents jumped from 140,000 in 1935 to 170,000.

Of the motor vehicle accident problem, the council said 1,000 of the 1,500 increase came in the last two months of 1936 when "open roads and fair weather permitted heavy traffic in the north half of the country where winter usually cuts the volume of highway travel." While traffic deaths rose 4 per cent, automobile registration jumped 8 per cent to 28,270,000 registered motor vehicles, "a greater number than ever before traveled American streets and highways." These vehicles traveled 225,000,000,000 (correct) miles in 1936 (computed from American Petroleum Institute figures on gasoline consumption), or 22,000,000,000 (correct) miles more than in any other year on record. Hence, mile for mile, the American motorists operated more safely than in 1935.

The sandwich gets its name from the Earl of Sandwich who was an inveterate gambler and passed whole days in gambling, eating, without stopping from play, only a piece of meat between two pieces of bread.

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BOOK REVIEWS

(Continued from page 635)

PUBLIC HEALTH AND HYGIENE

By Charles Frederick Bolduan, M.D., and Nils W. Bolduan, M.D. Second edition. Cloth. Price, $2.75. Pp. 371. Illustrated. Philadelphia: W. B. Saunders Company, 1936.

THE book is in five parts. In part I the authors deal with the general factors underlying community health. A historical survey comes first, followed by chapters on micro-organisms and disease, transmission of communicable diseases, life history of important insects (disease bearing), disinfection, noncommunicable diseases as health factors, principles of nutrition and social economic factors in public health. Communicable diseases are dealt with in part II, while part III touches lightly on problems of diet-deficiency disease, diseases of middle and later life, endocrine disturbances, mental disease, allergy and accidents. Part IV reviews the problem of community hygiene, with chapters on water supply, sewage, milk control, food inspection, sunlight and illumination, air and ventilation, industrial hygiene, infant and maternal hygiene, health of the school child, public health nursing and health education; all these topics are dealt with so briefly that it is doubtful whether the reader who has no public health background would get enough out of the book to be well repaid for his study. Part V deals with health administration, city, state and federal, and the appendix gives tables, graphs and the rules for communicable diseases in New York City.

It is an authentic book, good but not among the best, useful but not outstanding, suffering mainly from too much condensation, leaving the reader unsatisfied at the end of the chapter. It is illustrated with many good pictures and diagrams.

W. W. B.

THE EXCHANGE OF IDEAS

Pp. 4. Syracuse, N. Y.: The Onondaga Health Association. October 1936.

THE EDITOR of the School and Health Department looks forward every month to this mimeographed sheet of about four pages called "The Exchange of Ideas." It is edited by Mary B. Rappaport, health teaching supervisor of the Onondaga Health Association. There is a foreword by the editor, and there are several brief articles on experiences in health teaching by teachers in the village and rural schools of Onondaga County. These contributions carry one into many

classrooms where teachers are striving to promote the health and happiness of boys and girls. Here is a teacher who has hit on an ingenious way of getting first grade children to rest. Here is another teacher in a second grade who keeps a private record of the children she thinks need to be studied particularly. As a result she believes that she understands the problems of her pupils better and has been able to enlist the cooperation of physicians and parents effectively.

This cheery sheet makes it possible for every teacher in the county to profit from the health teaching experience of others. Those who wish to start similar experiments in their localities will want to see a copy of "Exchange of Ideas."

J. M. A.

HANDBOOK OF HEALTH EDUCATION

By Ruth E. Grout. Cloth. Price, $1.80. Pp. 298. Illustrated. Garden City, N. Y.: Doubleday, Doran & Co., Inc., 1936.

TO MOST readers a handbook is a concise, brief résumé of the entire subject. Handbooks are intended to be handy, easy to refer to and brief, telling in a paragraph the salient points on a given subject. This volume, which is intended as a guide for teachers in rural schools, is truly a handbook in its fullest sense. It is all-inclusive, clear and concise; yet it presents practically all the detailed information on the subject. At the start of the book the author points out the uselessness of regimentation in health and the necessity for making the school health program an outgrowth of actual situations in the school.

Materials of instruction should be based on the children's interests and needs. The author further states that, as far as health is concerned, to learn rules by rote is not only antiquated but useless. She states, "The child should be helped to practice healthful living throughout the day." One can have no quarrel with a statement that the teacher must give each child a basic understanding of the reasons for good health rules.

The chapters on Health Aims and School Health Inventory are particularly valuable and should be in the armamentarium of every school teacher, rural or urban. Throughout the entire book the author follows one pattern in presenting her subject. Under each title she begins with "possible approaches," wherein the teacher is advised to make use of "1. Problems arising from daily experiences in the school; 2. Characteristics of a good citizen; 3. Preparation for some important school event." The third can become the practical application of the problem at hand.

The references that the author gives for collateral reading as well as for fuller study of the subject are well chosen and include a sufficient variety to make them available to all rural teachers no matter where these teachers may be located.

The illustrations are well chosen; they are not the posed type of picture but actual photographs of country school rooms as well as illustrations by the children themselves. It is a good book deserving of a prominent place on the rural school teacher's desk.

P. A. T.

PLAY BUREAU

Compiled by Louis Rosenthal and Oscar Halpern. Play Bureau Publication No. 6. New York City: Federal Theatre Project, 303 W. 42nd St., 1936.

THIS is a listing of health plays available from various sources. It is a publication of the Federal Theatre Project of the Works Progress Administration. It is one of a number of lists of which the others deal with topics not related to health.

W. W. B.

RELATION OF SCIENTIFIC KNOWLEDGE TO EVERY-DAY PRACTICE

Health Bulletin for Teachers. Pp. 4. New York: Metropolitan Life Insurance Company, September 1936.

IT IS a sad commentary on our instruction and training in hygiene that we ignore so many health principles in our everyday living. We put off going to the dentist when we know that our teeth contain cavities. When we are in a hurry we cross the street against the traffic light. We may sit up until 1 o'clock in the morning to read, although we know that we must get up at 7 to catch the train to work. Many persons teach school or go to school when they have a cold. The plenitude of such behavior leads the School Health Bureau of the Metropolitan Life Insurance Company to speculate about the gap which still yawns between health knowledge and health conduct and to invite the readers of the bulletin to consider the health aspects of their everyday living in order that light may be thrown on this baffling problem. Help in the solution of this problem will be given during the coming year through these monthly bulletins, which may be secured free by teachers.

J. M. A.

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Do You Know—

1. On what factors the body temperature depends? *See page 619.*
2. What can be done for infantile paralysis when the patient is at home? *See page 657.*
3. What causes spasticity in a child at birth? *See page 628.*
4. How to select pineapples that are of the exact ripeness and quality for the intended use? *See page 646.*
5. How old is the game of tennis? *See page 641.*
6. What causes a separation to form between the front two teeth? *See page 650.*
7. If there is any truth to the old superstition that toads produce warts on the hands of persons who touch them? *See page 636.*
8. How many types of poisonous snakes there are in the United States today and what their names are? *See page 610.*
9. What is the immediate cause of headache? *See page 606.*
10. How thick are the walls of a human being's heart? *See page 608.*
11. What disease is treated by an inoculation with another, and who originated the treatment? *See page 639.*
12. What to do first when an injury from fireworks occurs? *See page 584.*
13. What precautionary measures should be taken for safeguarding against explosions in public buildings and institutions? *See page 653.*
14. How does the old conception of the term "fetish" differ from the present connotation of the word? *See page 630.*
15. What the ancient medical men believed to be the use of the lungs? *See page 600.*
16. How to prevent your child from becoming homesick when he is at camp? *See page 615.*

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CORRECT REFRIGERATION IS IMPORTANT DURING SUMMER MONTHS

With food prices inching upward from month to month, and the weather becoming warmer from day to day, it becomes increasingly important that none of the food we buy should go to waste because of spoilage. And there's no single piece of home equipment quite so helpful in food preservation as the refrigerator.

In *The Market Basket* the U. S. Department of Agriculture gives housewives helpful hints on food preservation by means of adequate refrigeration.

The coldest spot of that refrigerator should be dedicated to dairy products and meat. Both ought to have a temperature of 45 F. or below, especially if they are to be kept more than twenty-four hours.

Where the coldest spot is depends on the construction of the refrigerator. In the ice refrigerator, if the metal piece below the ice tilts back, the coldest place will be somewhere in line with the down current from the opening in the back. Where there are two metal sections separated by a space across the center the cold air will drop down the center of the cabinet.

In a mechanical refrigerator the coldest spot will be directly below the freezing unit. Most mechanical refrigerators, however, provide space for milk bottles beside the freezing unit instead of below. Though this isn't the coldest place, in the well insulated cabinet it probably is cold enough.

Then, too, some cabinets are so uniform in temperature because of the way the air currents move that there's only a degree or two of variation within the food compartment. In others there may be as much variation as eight degrees.

Milk and cream bottles should be kept covered, because milk is by nature too hospitable to passing odors and bacteria for its own good. Creamed vegetable and meat dishes and desserts made of milk or cream require the same treatment as the milk itself. All should be in the refrigerator's coldest area, and all should be covered. Butter

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10 Cedar Street New York, N.Y.

DOCTOR SAYS—

"And now it's time to put Baby on Gerber's"

"I've been recommending Gerber's for years. Their vegetables are *Home Grown*; their scientific cooking preserves important vitamins and minerals in a high degree. All Gerber's strained foods are *uniformly* high in quality."

"It's grand to see baby looking so well. He's improved steadily since I put him on Gerber's and from the first I've had no trouble in getting him to eat these fine strained foods. I'm not surprised that Gerber's *outsells* all other brands."

"Gerber's Strained Foods are *so* convenient. They free me from a really hard job—which I couldn't possibly do as well as Gerber does—and give me *extra* time to devote to other phases of my baby's welfare."

Look for the happy, healthy Gerber baby on every can of Gerber's Foods. It is your assurance of an honest, scientific product.

Gerber's

Shaker-Cooked Strained Foods

STRAINED VEGETABLE SOUP—TOMATOES—GREEN BEANS — BEETS — CARROTS — PEAS — SPINACH — PRUNES—CEREAL—APRICOT AND APPLE SAUCE—LIVER SOUP.

GERBER PRODUCTS COMPANY
Dept. 127 FREMONT, MICHIGAN
(In Canada, Gerber's are *grown and packed by* Fine Foods of Canada, Ltd., Tecumseh, Ontario.)

should be kept in its oiled paper covering inside its box—or better yet in a covered butter dish. All fats should, of course, be kept covered because of their way of taking up odors. Lard and oils, however, needn't be in an especially cold place.

Oiled paper makes a good covering for containers if there is no cap or lid available. A square of the paper fitted over the top of the container and held down with a rubber band is quite satisfactory.

In some ice refrigerators you can find butter and milk bottles nestling against the block of ice, which is a practice frowned on both by engineers and by home economists. The engineers disapprove of it because the presence of any food in with the ice interferes with the free circulation of air along all sides of the ice and may raise the temperature of the cabinet. The home economists dislike this practice for the same reason and also because it puts butter, the very product that is most easily contaminated by odors, in the most odorous spot. As the warmer air currents return to the block of ice they carry with them a load of odors from the various foods. These collect in the film of melting ice and run down the drain and are carried away. Even if the articles are covered, they tend to absorb some of the odors.

In the case of the mechanical refrigerator, odors collect in the frost on the evaporator, so that when the machine is defrosted they are carried along with the water into the defrosting pan.

Occasionally a "thrifty" housewife wraps the ice for her refrigerator in newspapers. If all she wants is to have ice to put into drinks, this is legitimate. But if her wish is to keep food in the cabinet in good condition, she is working against that end. In an ice refrigerator you can't get a cool cabinet without melting ice, and heat in the food and in the cabinet cannot be so easily transferred to wrapped ice. Also vagrant odors cannot then be readily absorbed.

Meats require as much care as does milk. Before they are put into the refrigerator the wrapping paper should be removed, as a possible source of contamination in the cabinet. Then, too, it absorbs meat juices and adheres so closely to the meat surface that air cannot get at it; consequently the meat will spoil more quickly.

Fresh meat should never be tightly covered in storage. Home economists advise putting it onto a shallow dish and setting it into the refrigerator, with at most no

The surest way to please your baby at mealtime is to feed him Heinz Strained Foods! Try them yourself. You're bound to like their natural color—prefer their "garden" flavor. Heinz cooks the country's finest vegetables and fruits scientifically, with dry steam, in sealed kettles. Thus their valuable vitamins and minerals are retained in high degree—cooked *in*, never out! Your grocer has 12 kinds of Heinz Strained Foods. You'll pay no premium for their *extra* quality!

Guard your baby's health—look for these two Safety Seals...

ACCEPTED AMERICAN MEDICAL ASSN. 57

● WHENEVER SODIUM BICARBONATE *is prescribed . . .*

Remember that either Arm & Hammer or Cow Brand Baking Soda are Sodium Bicarbonate, U. S. P. See page 669 for details.

CHURCH & DWIGHT CO., Inc.
10 Cedar St., New York, N. Y.

Of the most absorbing importance to expectant mothers

"A Child is to be Born"

A reprint of the delightful and practical articles in HYGEIA

Diet · Clothing · Exercise
Symptoms · Bathing · Teeth
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10c AN ENCOURAGING AND SYMPATHETIC BOOKLET 10c

American Medical Association
535 N. Dearborn St. Chicago, Illinois

more than a piece of oiled paper laid on top, not wrapped around it. The cut surface of fresh meat is already so moist that it is particularly susceptible to contamination. A little drying out doesn't especially affect palatability and does slow up spoilage.

If the meat pieces are small, as with steaks and chops, they can be put directly into the freezing unit of a mechanical refrigerator unless ice cubes are too much in demand.

A good rule is to buy meat as near as possible to the time it is to be prepared. There may be as much as 6 per cent loss in meat weight in some types of home

refrigerators in twenty-four hours. It depends on the type of refrigerator as well as on the size of the meat piece, the extent of the cut surface exposed and the amount of fat on it.

With chopped or ground meats, like hamburger and fresh sausage, good refrigeration is doubly important. Such meats are usually made from small pieces and as such have had greater chances of contamination in the meat market. The very act of grinding a meat means increased possibility of contamination. Grinding releases meat juices. It distributes whatever bacteria may be present. It gives bacteria a larger surface to grow on. Hence, such meats should be cooked promptly.

Once meat has been cooked, it is more easily stored. It too must be kept cold and used soon, but it may be covered to prevent drying out. If you have left-over meat pieces and plan to dice or grind them for dinner the next day, put them into a covered dish and cut or grind them a short time before they are needed. If the ground or diced meat is not to be reheated, this is especially important. Diced and ground meats spoil more quickly than do large sections of meat.

Cured meat won't spoil easily, but the fat in it can get rancid, and it can become a medium for growth of molds. Bacon gets soft and flabby and develops an undesirable flavor and odor if it is kept in too warm a place. Sliced bacon deteriorates in palatability

"I'M COUNTING ON YOU"

A&P FOOD STORES

Perhaps he hasn't said it in words . . . but you know it's so. He counts on you to give him the benefits of plenty of milk. And you can count on White House Evaporated Milk to add nourishment to creamed soups and vegetables . . . cocoa . . . desserts . . . because *There Is None Better.* Accepted by the Council on Foods of the American Medical Association.

SOLD AT A&P STORES EVERYWHERE

Mention HYGEIA When Writing to Advertisers

What's in a Can of Canned Food?

Modern knowledge is shattering many false ideas about canned foods. Be sure to read the highly informative series of ads in HYGEIA on values of canned foods. See Second Cover.

AMERICAN CAN COMPANY, New York City

BEECH-NUT Now Makes STRAINED FOODS IN GLASS JARS!

IMPORTANT! POPULAR PRICE

See Page 672 For Details

WHEATIES

Make youngsters eat big breakfasts—start them off with a heaping bowl of Wheaties, the new whole wheat cereal. Nutritious and delicious. At your grocer. See 3rd Cover.

You Can Depend upon These General Foods Products

Ask for

MINUTE GELATINE INSTANT POSTUM
CALUMET BAKING POWDER
D-ZERTO JELLO
DIAMOND CRYSTAL IODIZED SHAKER SALT
SANKA COFFEE See page 659

Strained or Sieved Foods Prepared at Home WITH A FOLEY FOOD MILL

PEAS BEANS CARROTS SPINACH TOMATOES FRUITS

A few turns of the handle and you have finely pulped vegetables or fruits for infant feeding or smooth diets of adults. Widely endorsed by doctors and hospitals. Fills a daily need in every kitchen. Mashes, rices, and strains all cooked vegetables and fruits.

Family size, 1½ qts., $1.50
Junior size, 1 qt., $1.25

At department or hardware stores, or on direct order.

FOLEY MFG. CO.
11 N. E. Main St., Minneapolis, Minn.

PLEASE SEE PAGE 577

BABIES TOO CAN NOW GET
THE CARE AND FINE FLAVOR OF
BEECH-NUT IN STRAINED FOODS

Babies are even fussier about taste than grown-ups. Recognizing this, Beech-Nut has turned to the making of Strained Foods —the Beech-Nut way.

Jars sterilized by live steam

Hand-picked, prime quality fruits and vegetables are prepared in spotless rooms. Cooked out of contact with air. Packed in sterilized *glass* jars.

Priced for even the thriftiest babies

Best of all, Beech-Nut has brought the price down. You'll be surprised how little you'll pay for these scientifically prepared foods.

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Beech-Nut

STRAINED FOODS

VARIETIES: PEAS, APPLE SAUCE, GREEN BEANS, BEETS, PRUNES, SPINACH, APRICOTS, CARROTS, TOMATO JUICE, VEGETABLE SOUP, OATMEAL, FARINA, BLENDED CEREAL

if it is kept too long in the ordinary refrigerator.

In arranging food containers, avoid having them so close together that air cannot circulate between them. A shelf crowded with sacks and other containers can block the passage of cold air to the sections below.

THE PARENTS' RELATION TO FOURTH OF JULY ACCIDENTS

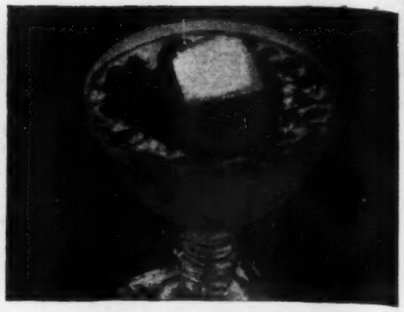
The parents will be largely responsible for the 700 children's deaths occurring from the use of fireworks and from firearms accidents this year, according to *Safety Education* magazine. They say also that while air rifles and air guns, some of which can penetrate a pine plank 1 inch thick at a distance of 100 feet, are used as toys and while children are permitted to use fireworks, this destruction of life will continue.

As a result of the increased publicity focused on Fourth of July accidents the death total has diminished during the last twenty-five years. However, the estimate for deaths in this year's celebration is still far too great to ignore.

State laws and city ordinances seem to be the most effective means so far encountered for the control of these accidents. Michigan and Kentucky are the only states with laws forbidding the sale of fireworks and limiting their use to municipalities or organizations to which a permit has been granted. Other states have such bills pending in the legislature. Producers, the article stated, welcome the bans on the sale of fireworks to individuals because of the compensation through large sales to organizations.

It was further pointed out that if most of the gun and toy firearms accidents which kill and injure children within a year were to take place at one time, something drastic would doubtless be accomplished. In 1934, the last year for which complete figures are available, 580 children between the ages of 5 and 14 died as the result of firearms accidents. Among the group who had not yet reached the age of 5, the toll was 109. In addition to these deaths, there is the large group of children handicapped for life by loss of sight.

The man with a 75 per cent efficient heart may never suffer any further impairment if he governs his life and habits so as to require only 75 per cent work from his heart.



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Stimulate Appetite for MILK

Made in 3 minutes—no eggs, no baking, no boiling—digest easier than plain milk

"JUNKET" Rennet Powder—Already sweetened and flavored for making an endless variety of rennet-custards. Just add to LUKEWARM milk—let set 10 minutes, then chill. Six tempting flavors:

Vanilla	Chocolate	Lemon
Orange	Raspberry	Maple

"JUNKET" Rennet Tablets — Not sweetened or flavored—add sugar and flavor to taste. More economical for making rennet-custards, easily digested milk foods for infants, invalids and convalescents. Also for making smoother ice cream with less cream in hand freezers.

FREE Recipe Book
—for 61 new desserts and ice creams —mail postcard to "THE 'JUNKET' FOLKS," Chr. Hansen's Laboratory, Inc., Dept. 337, Little Falls, N. Y.

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Saves Work for Mothers

Why go to the trouble of cooking and straining vegetables for baby when, for only a few cents a day, you can feed Gerber's Strained Vegetables? 9 foods to choose from. See page 670.

GERBER PRODUCTS CO.
Fremont, Mich.

DO YOU LIKE GOOD CREAM CHEESE?
HAVE YOUR DEALER SHOW YOU THE NAME
Breakstone's
WHEN HE CUTS YOUR ORDER

PRICE LIST OF
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Send for a free catalog listing publications of the American Medical Association dealing with community health, personal hygiene and sanitation. Listed are posters, lantern slides, plays, lectures, pamphlets and other publications of interest to the public. Help spread the gospel of health in your community.

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